

**PROCESSED CSMIP STRONG-MOTION RECORDS FROM
THE NORTHRIDGE, CALIFORNIA EARTHQUAKE
OF JANUARY 17 1994: RELEASE NO. 4**

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INTRODUCTION

The digitized and processed records obtained from 10 CSMIP stations during the Northridge earthquake of January 17, 1994 are included in this fourth release. The stations range in distance from 18 to 70 km (epicentral). The stations are:

• Los Angeles - UCLA Grounds	Sta. # 24688, 18 km
• Vasquez Rocks Park	Sta. # 24047, 37 km
• Alhambra - Fremont School	Sta. # 24461, 39 km
• Lake Hughes #9	Sta. # 24272, 44 km
• Mt. Wilson - Caltech Seismic Station	Sta. # 24399, 45 km
• Camarillo	Sta. # 25282, 50 km
• Rolling Hills Estate - Rancho Vista School	Sta. # 14405, 50 km
• Point Mugu - Naval Air Station	Sta. # 25147, 54 km
• Lancaster - Fox Airfield Grounds	Sta. # 24475, 66 km
• Ventura - Harbor & California	Sta. # 25340, 70 km

Strong-motion records were recovered from 193 CSMIP stations following the Northridge earthquake. The accelerograms, information on the earthquake and recording stations are presented in the CSMIP data report on this earthquake (Shakal and others, 1994). The results of digitizing and processing for the first release of 5 records were announced on February 4, 1994 and were included in the first release report (Darragh and others, 1994a). The results of digitizing and processing for the second release of 5 records were announced on February 24, 1994 and were included in the second release report (Darragh and others, 1994b). The results of digitizing and processing for the second release of 7 records were announced on March 15, 1994 and were included in the third release report (Darragh and others, 1994c). Details on accelerogram digitizing and processing will be presented in a forthcoming final CSMIP processed data report.

Table 1 summarizes the ground motion results for the 27 stations included in the first, second, third and fourth release reports. The coordinates, site characteristics, epicentral distance and maximum values of ground motion are given for each station in this table. Table 1 also lists the Usable Data Bandwidth.

PLOTS OF PROCESSED DATA

For each ground-response station the plots are numbered in the upper right corner of each page. The first page for each station is given below as:

<u>Page No.</u>	<u>Station Name</u>
11	Los Angeles - UCLA Grounds
21	Vasquez Rocks Park
31	Alhambra - Fremont School
41	Lake Hughes #9
51	Mt. Wilson - Caltech Seismic Station
61	Camarillo
71	Rolling Hills Estate - Rancho Vista School
81	Point Mugu - Naval Air Station
91	Lancaster - Fox Airfield Grounds
101	Ventura - Harbor & California

The order of the plots for each station is as follows:

1. Phase 1 (Vol. 1) data: Uncorrected accelerations. Acceleration for the first 22 seconds is plotted with a common scaling factor for all channels; three channels are plotted on one page. This plot is followed by a 60 second plot with each channel individually scaled. In general, the processing length is 60 seconds. However, a length of 65 seconds was chosen to process late arriving energy at Camarillo and Ventura.
2. Phase 2 (Vol. 2) data: Instrument and baseline-corrected acceleration, velocity and displacement. The data for 60 seconds (in general, the full processed length) are plotted with equal scaling for all channels. The filter frequencies determined in the processing are indicated on the plots (see Usable Data Bandwidth).
3. Phase 3 (Vol. 3) data: Response spectra. The pseudo-velocity spectra (PSV), the pseudo-acceleration spectra (PSA), the displacement spectra (SD) and the Fourier amplitude spectra (FS) are presented on a tripartite logarithmic plot for each channel for 0%, 2%, 5%, 10%, and 20% dampings. The spectra are plotted for periods within the Usable Data Bandwidth.
4. Phase 3 (Vol. 3) data: Response spectra. The absolute acceleration spectra (SA) for 0%, 2%, 5%, 10% and 20% dampings are plotted against period with linear-linear scaling from 0 to 4 seconds.

REFERENCES

Darragh, R., T. Cao, C. Cramer, M. Huang and A. Shakal (1994a). Processed CSMIP Strong-Motion Records from the Northridge, California Earthquake of January 17, 1994: Release No. 1, Calif. Dept. of Conservation, Div. Mines and Geology, Office of Strong Motion Studies, Report No. OSMS 94-06B, February 4, 1994, 48 p.

Darragh, R., T. Cao, M. Huang and A. Shakal (1994b). Processed CSMIP Strong-Motion Records from the Northridge, California Earthquake of January 17, 1994: Release No. 2, Calif. Dept. of Conservation, Div. Mines and Geology, Office of Strong Motion Studies, Report No. OSMS 94-08, February 24, 1994, 48 p.

Darragh, R., T. Cao, C. Cramer, V. Graizer, M. Huang and A. Shakal (1994c). Processed CSMIP Strong-Motion Records from the Northridge, California Earthquake of January 17, 1994: Release No. 3, Calif. Dept. of Conservation, Div. Mines and Geology, Office of Strong Motion Studies, Report No. OSMS 94-09, March 15, 1994, 78 p.

Shakal, A., M. Huang, R. Darragh, T. Cao, R. Sherburne, P. Malhotra, C. Cramer, R. Sydnor, V. Graizer, G. Maldonado, C. Petersen and J. Wampole (1994). CSMIP Strong-Motion Records from the Northridge, California Earthquake of 17 January 1994, Calif. Dept. of Conservation, Div. Mines and Geology, Office of Strong Motion Studies, Report No. OSMS 94-07, February 18, 1994, 308 p.

TABLE 1 - SUMMARY OF PROCESSED GROUND-RESPONSE RECORDS FROM

Station No.	Station Name	Station Coordinates		Site Geology	Instrument Housing *	Epicentral
		N Lat.	W Long.			Dist. ** (km)
24087	Arleta Nordhoff Ave Fire Station	34.236	118.439	Alluvium	1-story bldg.	10
24514	Sylmar County Hospital Parking Lot	34.326	118.444	Alluvium	Small 1-story bldg.	16
24088	Pacoima Kagel Canyon	34.288	118.375	Rock (sedimentary)	1-story bldg.	18
24688	Los Angeles UCLA Grounds	34.068	118.439	Alluvium	Instr. shltr. H	18
24207	Pacoima Dam Downstream	34.334	118.396	Metamorphic rock (diorite gneiss)	Instr. shltr. D	19
24389	Century City LACC North	34.063	118.418	Alluvium	Instr. shltr. H	20
24279	Newhall LA County Fire Station	34.390	118.530	Alluvium	1-story bldg.	20
24538	Santa Monica City Hall Grounds	34.011	118.490	Alluvium	Instr. shltr. H	23
24303	Los Angeles Hollywood Storage Bldg. Grounds	34.090	118.339	Deep alluvium	Instr. shltr. H	23
24157	Los Angeles Baldwin Hills	34.009	118.361	Thin fill and alluvium over rock (shale)	Instr. shltr. H	28
24396	Malibu Point Dume	34.013	118.800	Thin alluvium over rock (sedimentary)	1-story bldg.	32
24283	Moorpark	34.288	118.881	Alluvium	Small garage	33

THE NORTHRIDGE EARTHQUAKE OF JANUARY 17, 1994

Station No.	Trigger Time #	Component		Peak Accel. (g) ##	Peak Velocity (cm/sec)	Peak Displ. (cm)	Usable Data Bandwidth
		Azimuth (deg.)					
24087	---	90		0.347	-40.4	8.9	0.10-23.6 Hz
		UP		-0.582	-17.5	-6.5	(0.04-9.80 sec)
		360		0.306	-23.3	8.3	
24514	31:00.4	90		0.608	-76.9	-15.2	0.10-23.6 Hz
		UP		0.578	18.6	7.6	(0.04-9.80 sec)
		360		0.892	-128.9	-32.5	
24088	30:59.5	90		0.304	-30.9	-10.6	0.12-23.6 Hz
		UP		0.192	14.2	-4.4	(0.04-8.40 sec)
		360		0.434	-50.9	6.6	
24688	31:00.4	90		-0.313	-22.0	4.0	0.14-23.6 Hz
		UP		0.280	9.6	3.1	(0.04-7.35 sec)
		360		0.634	21.9	7.3	
24207	---	265		0.446	30.6	-5.0	0.14-23.6 Hz
		UP		-0.195	16.1	-2.6	(0.04-7.35 sec)
		175		-0.419	44.7	-4.6	
24389	31:00.8	90		0.262	21.4	-6.0	0.12-23.6 Hz
		UP		-0.149	-8.7	-3.2	(0.04-8.40 sec)
		360		0.232	-25.1	6.0	
24279	31:00±	90		-0.610	-74.8	17.6	0.10-23.6 Hz
		UP		0.605	30.7	12.8	(0.04-9.80 sec)
		369		0.598	-94.7	30.5	
24538	31:02.9	90		-0.901	41.8	-14.3	0.12-23.6 Hz
		UP		-0.257	14.0	3.8	(0.04-8.40 sec)
		360		-0.414	24.9	6.5	
24303	---	90		0.233	-18.1	4.7	0.14-23.6 Hz
		UP		-0.184	-9.9	-2.4	(0.04-7.35 sec)
		360		-0.401	22.3	4.3	
24157	---	90		0.238	14.8	5.8	0.14-23.6 Hz
		UP		-0.097	-8.5	3.3	(0.04-7.35 sec)
		360		-0.176	17.5	-4.6	
24396	31:02.0	90		0.130	8.4	2.0	0.26-23.6 Hz
		UP		0.094	-4.3	1.0	(0.04-3.92 sec)
		360		0.101	9.2	-1.8	
24283	31:02.7	180		0.297	20.3	4.4	0.14-23.6 Hz
		UP		-0.151	6.5	-3.2	(0.04-7.35 sec)
		90		0.194	-20.4	4.0	

TABLE 1 - SUMMARY OF PROCESSED GROUND-RESPONSE RECORDS FROM

Station No.	Station Name	Station Coordinates		Site Geology	Instrument Housing *	Epicentral
		N Lat.	W Long.			Dist. ** (km)
24047	Vasquez Rocks Park	34.492	118.327	Alluvium over hard sandstone	Instr. shltr. A	37
24400	Los Angeles Obregon Park	34.037	118.178	Alluvium	1-story bldg.	39
24461	Alhambra Fremont School	34.070	118.150	Alluvium	1-story bldg.	39
24401	San Marino Southwestern Academy	34.115	118.130	Deep alluvium	1-story bldg.	39
24278	Castaic Old Ridge Route	34.564	118.642	Sedimentary rock	1-story bldg.	41
14403	Los Angeles 116th St. School	33.929	118.260	Alluvium	1-story bldg.	41
24272	Lake Hughes #9	34.608	118.558	Metamorphic rock (gneiss)	Instr. shltr. H	44
24399	Mt. Wilson Caltech Seismic Station	34.224	118.057	Rock (granitic)	Seismic vault	45
14368	Downey County Maint. Bldg.	33.924	118.167	Deep alluvium	1-story bldg.	47
25282	Camarillo	34.208	119.079	Alluvium	1-story bldg.	50
14405	Rolling Hills Estate Rancho Vista School	33.787	118.356	Rock (shale)	1-story bldg.	50
25147	Point Mugu Naval Air Station	34.113	119.119	Alluvium	Radar dome	54

THE NORTHRIDGE EARTHQUAKE OF JANUARY 17, 1994 (continued)

Station No.	Trigger Time #	Component				Usable Data Bandwidth
		Azimuth (deg.)	Peak Accel. (g) ##	Peak Velocity (cm/sec)	Peak Displ. (cm)	
24047	31:02.7	90	0.147	12.0	2.7	0.17-23.6 Hz
		UP	0.090	-6.8	1.5	(0.04-5.88 sec)
		360	-0.157	18.2	-2.8	
24400	31:04.8	90	0.358	14.5	-4.2	0.14-23.6 Hz
		UP	-0.115	4.3	-1.7	(0.04-7.35 sec)
		360	-0.424	-30.9	-2.6	
24461	31:04.4	90	-0.102	-10.9	-2.5	0.20-23.6 Hz
		UP	0.047	4.2	-1.0	(0.04-4.90 sec)
		360	0.083	4.9	-1.3	
24401	31:04.5	90	0.126	-7.9	-1.0	0.26-23.6 Hz
		UP	0.094	3.6	0.6	(0.04-3.92 sec)
		360	0.156	6.4	-1.0	
24278	31:03.4	90	0.582	-51.5	-8.5	0.10-23.6 Hz
		UP	0.223	12.2	-4.8	(0.04-9.80 sec)
		360	0.523	-52.6	-15.6	
14403	31:04.1	90	-0.200	15.6	-2.8	0.14-23.6 Hz
		UP	0.060	-2.8	-1.3	(0.04-7.35 sec)
		360	-0.143	-13.2	-2.6	
24272	31:03.9	90	-0.227	-13.4	-2.9	0.12-23.6 Hz
		UP	-0.089	3.4	-2.7	(0.04-8.40 sec)
		360	-0.174	8.5	3.7	
24399	31:04.5	90	-0.145	5.3	-0.5	0.34-23.6 Hz
		UP	0.098	2.9	-0.5	(0.04-2.94 sec)
		360	0.234	-7.5	-0.6	
14368	---	90	-0.173	-9.7	-3.3	0.17-23.6 Hz
		UP	-0.139	3.5	-1.1	(0.04-5.88 sec)
		360	-0.223	12.7	1.9	
25282	---	270	0.122	11.7	3.1	0.17-23.6 Hz
		UP	-0.053	4.9	1.1	(0.04-5.88 sec)
		180	-0.127	-10.7	3.5	
14405	---	90	0.118	-8.6	1.2	0.26-23.6 Hz
		UP	-0.043	-2.0	-0.5	(0.04-3.92 sec)
		360	-0.108	-5.7	0.9	
25147	31:06.3	90	0.146	16.2	-2.7	0.26-23.6 Hz
		UP	-0.068	4.3	0.9	(0.04-3.92 sec)
		360	0.181	-13.0	-2.1	

TABLE 1 - SUMMARY OF PROCESSED GROUND-RESPONSE RECORDS FROM

Station No.	Station Name	Station Coordinates		Site Geology	Instrument Housing *	Epicentral Dist. ** (km)
		N Lat.	W Long.			
14560	Long Beach City Hall Grounds	33.768	118.196	Alluvium	Instr. shltr. H	58
24475	Lancaster Fox Airfield Grounds	34.739	118.214	Alluvium	Instr. shltr. H	66
25340	Ventura Harbor & California	34.276	119.293	Alluvium	Instr. shltr. H	70

* - Instrument shelter types:

Instr. shltr D - small metal box

Instr. shltr H - small fiberglass shelter

** - Distance given relative to the epicenter at 34.209N, 118.541W.

THE NORTHRIDGE EARTHQUAKE OF JANUARY 17, 1994 (continued)

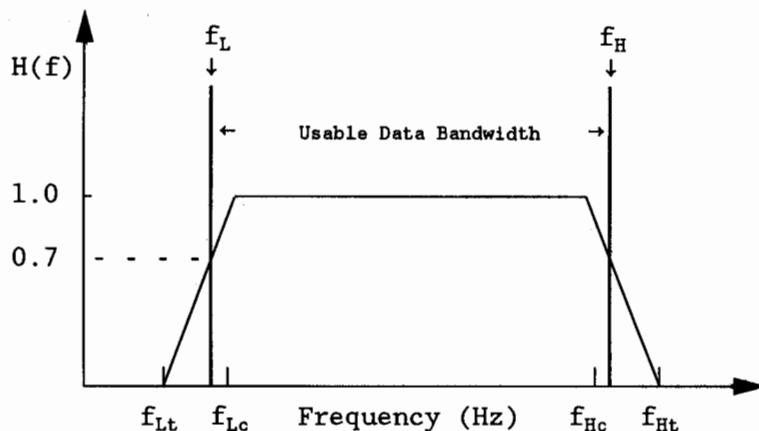
Station No.	Trigger Time #	Azimuth (deg.)	Component			Usable Data Bandwidth
			Peak Accel. (g) ##	Peak Velocity (cm/sec)	Peak Displ. (cm)	
14560	31:10.3	90	0.039	-4.9	1.7	0.26-23.6 Hz
		UP	-0.024	-1.9	-0.7	(0.04-3.92 sec)
		360	-0.054	-4.0	0.9	
24475	31:07.6	90	-0.064	-5.4	-1.2	0.26-23.6 Hz
		UP	0.050	4.0	0.9	(0.04-3.92 sec)
		360	0.084	7.0	-1.5	
25340	31:10.2	90	-0.054	7.8	2.6	0.17-23.6 Hz
		UP	-0.027	-5.1	2.6	(0.04-5.88 sec)
		360	0.077	-11.9	3.4	

Accelerograph trigger time, when present, in minutes and seconds after 12:00:00 UTC on 17 January 1994.

Phase 1 (Volume 1) peak acceleration values.

DEFINITION OF USABLE DATA BANDWIDTH

The filter bands for each record are indicated on the plots for the Phase 2 and Phase 3 data. In standard processing, the digitized data are processed and filtered using Ormsby filters. The data are first low-pass filtered using a high-frequency filter with a corner frequency of 23 Hz and a roll-off termination frequency of 25 Hz. Then the data are high-pass filtered using a low-frequency filter with a corner frequency of 0.07 Hz and a roll-off termination of 0.05 Hz. Therefore, the Phase 2 data is the result of the digitized data being filtered by the bandpass filter $H(f)$ with ramps as shown in the figure:



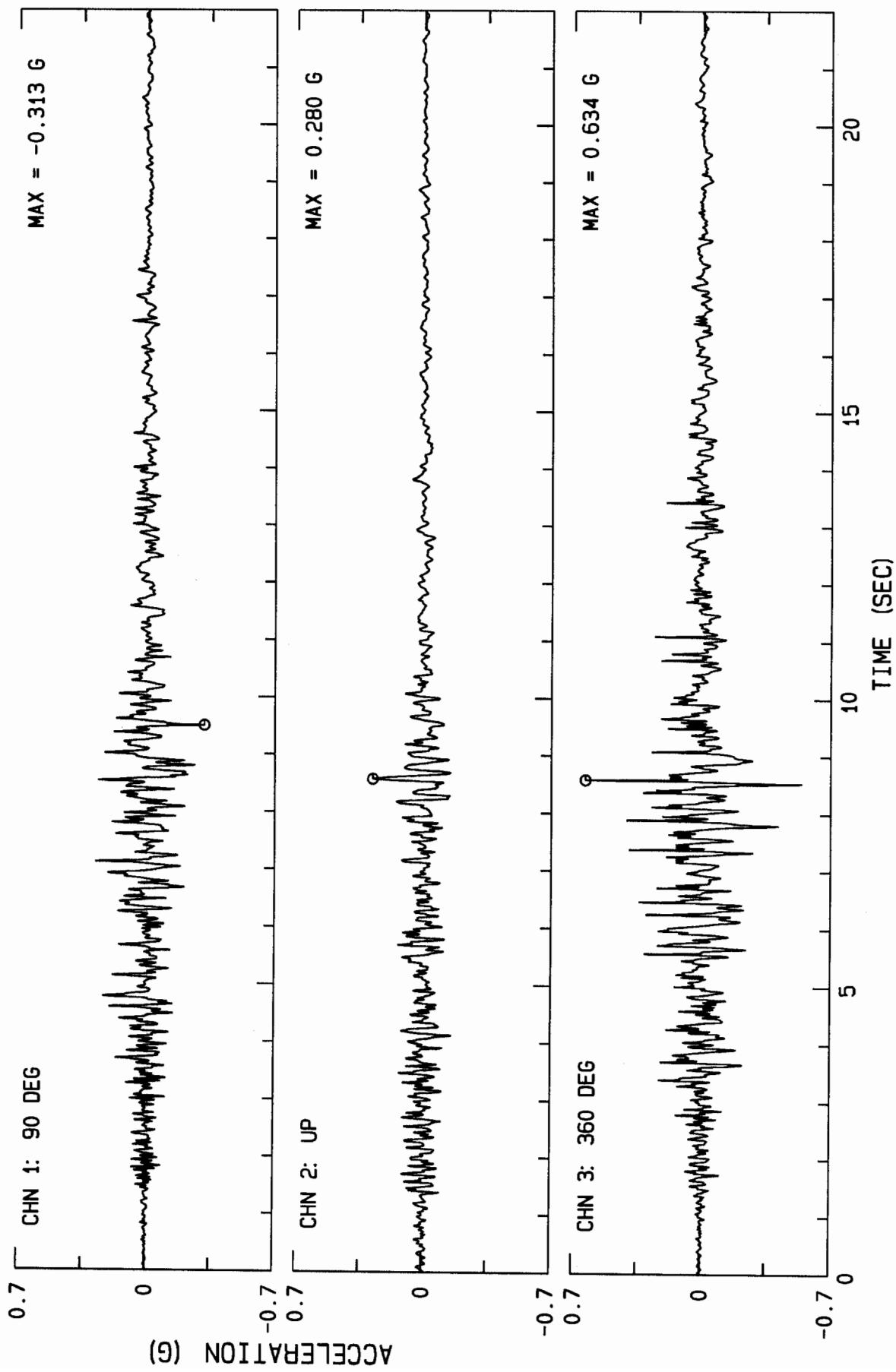
The Usable Data Bandwidth is defined as the band between frequencies f_H and f_L , where f_H and f_L are the -3 dB points on the high-frequency and low-frequency ramps, respectively. The value of $H(f)$ is approximately equal to 0.7 for -3 dB (see Notes). The user should only use these data for analyses within this bandwidth.

For example, if $f_{Lc} = 0.30$ Hz, $f_{Hc} = 23.0$ Hz, $f_{Lt} = 0.60$ Hz, and $f_{Ht} = 25.0$ Hz, then the Usable Data Bandwidth is 0.51 Hz to 23.6 Hz (0.042 to 2.0 seconds period).

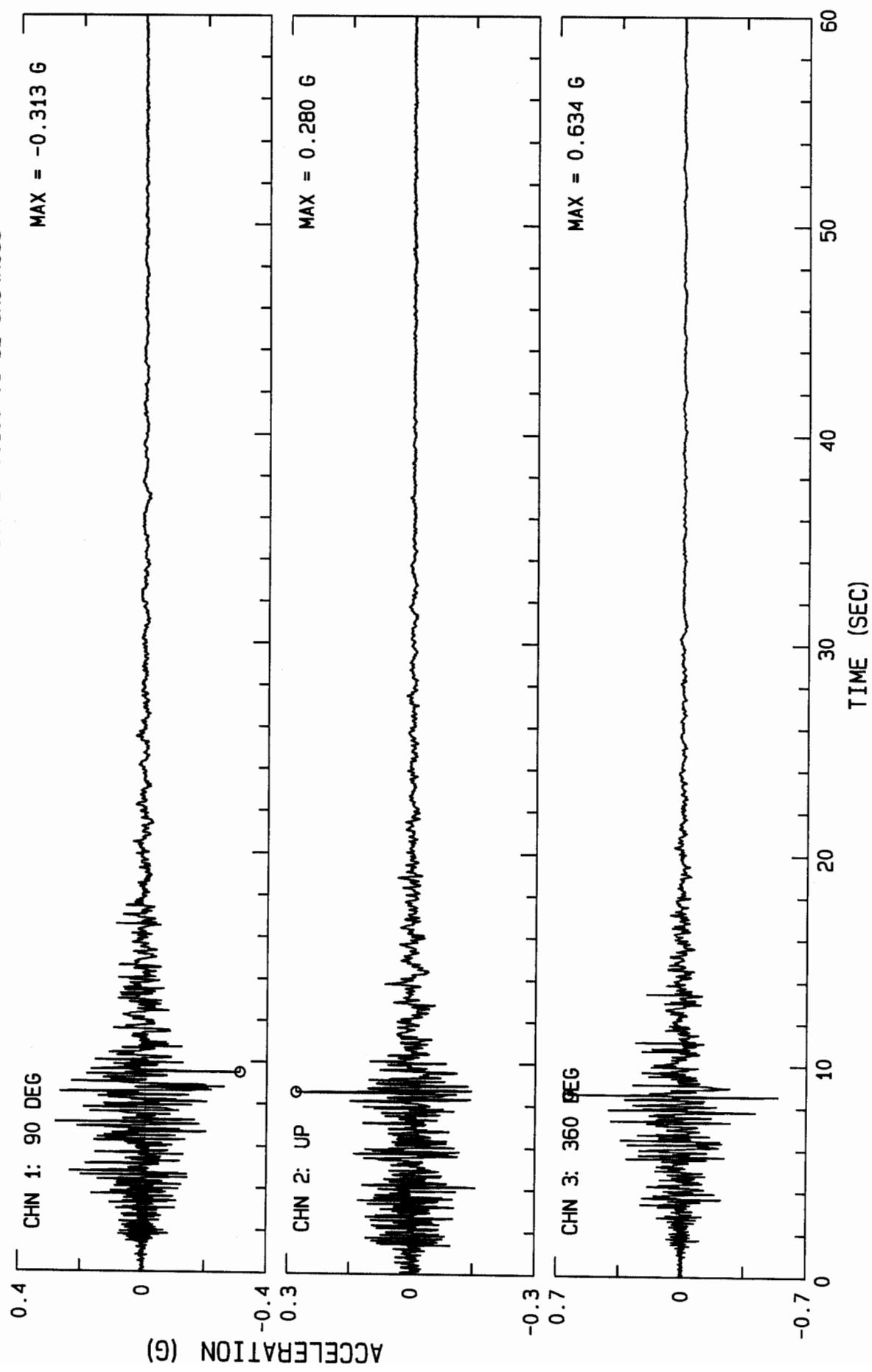
Notes:

- 1) The values of f_H and f_L can be calculated from the corner frequencies (f_{Hc} , f_{Lc}) and the roll-off termination frequencies (f_{Ht} , f_{Lt}) used in the processing by using the formulas $f_H = f_{Hc} + 0.3 * (f_{Ht} - f_{Hc})$ and $f_L = f_{Lc} - 0.3 * (f_{Lc} - f_{Lt})$. For example, the Usable Data Bandwidth for data bandpass-filtered with ramps at 0.30 to 0.60 Hz and 23.0 to 25.0 Hz is 0.51 Hz to 23.6 Hz (0.042 to 2.0 seconds period).
- 2) It is common in signal processing to plot $20 \log_{10}[H(f)]$ versus frequency, and express the ordinate value in decibels (abbreviated dB). Accordingly, 0 dB corresponds to a value of $H(f)$ equal to 1; 20 dB is equivalent to $H(f) = 10$, and -20 dB corresponds to $H(f) = 0.1$. Thus, at the -3 dB frequency point, the amplitude of the transfer function, $H(f)$, is reduced to 0.7, while the power transmitted by the filter, $H^2(f)$, is reduced to 0.5.

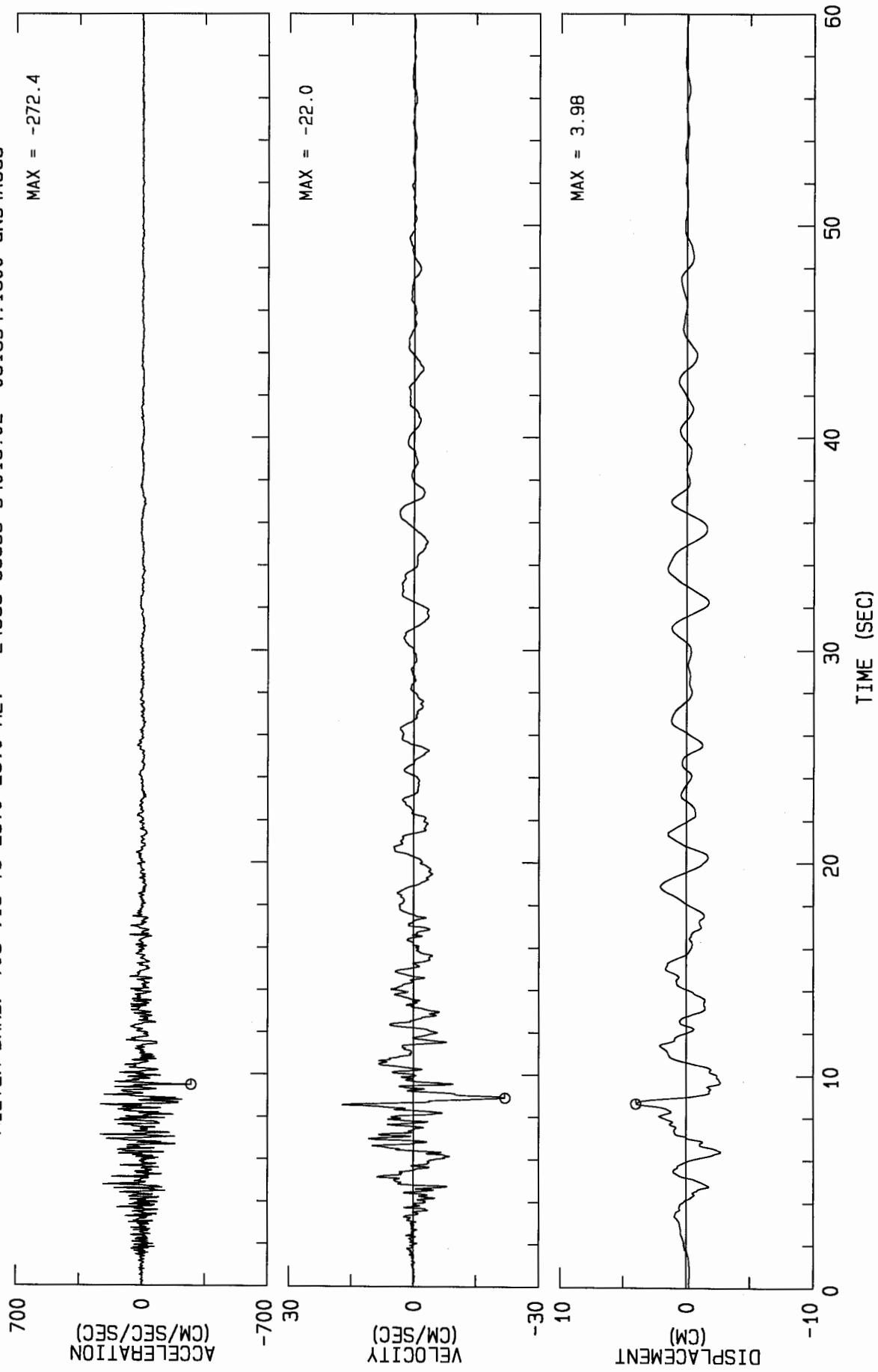
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - UCLA GROUNDS
UNCORRECTED ACCELEROMETER
24688-S3399-94018.02 031594.1452-QN94A688



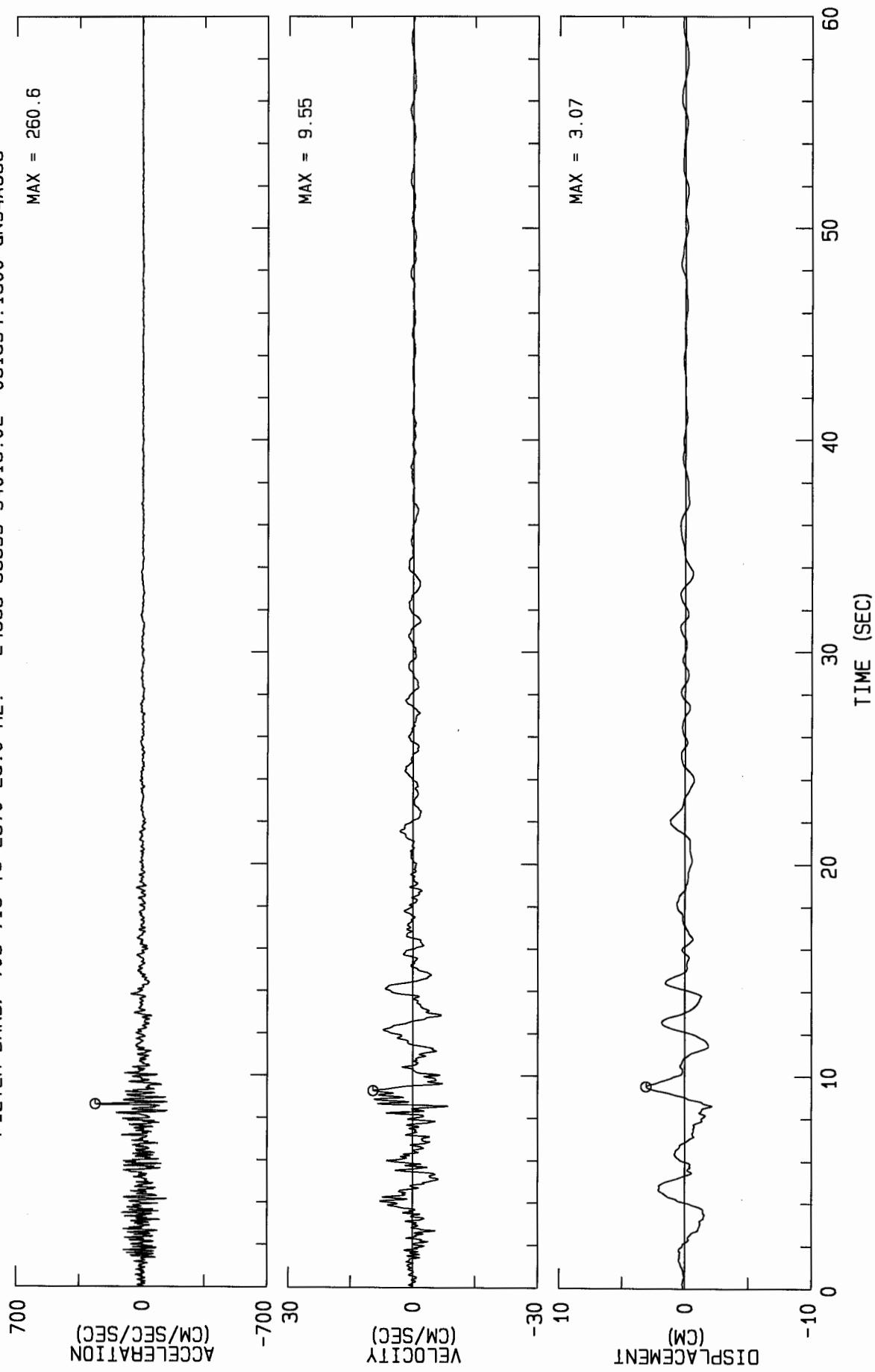
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LOS ANGELES - UCLA GROUNDS
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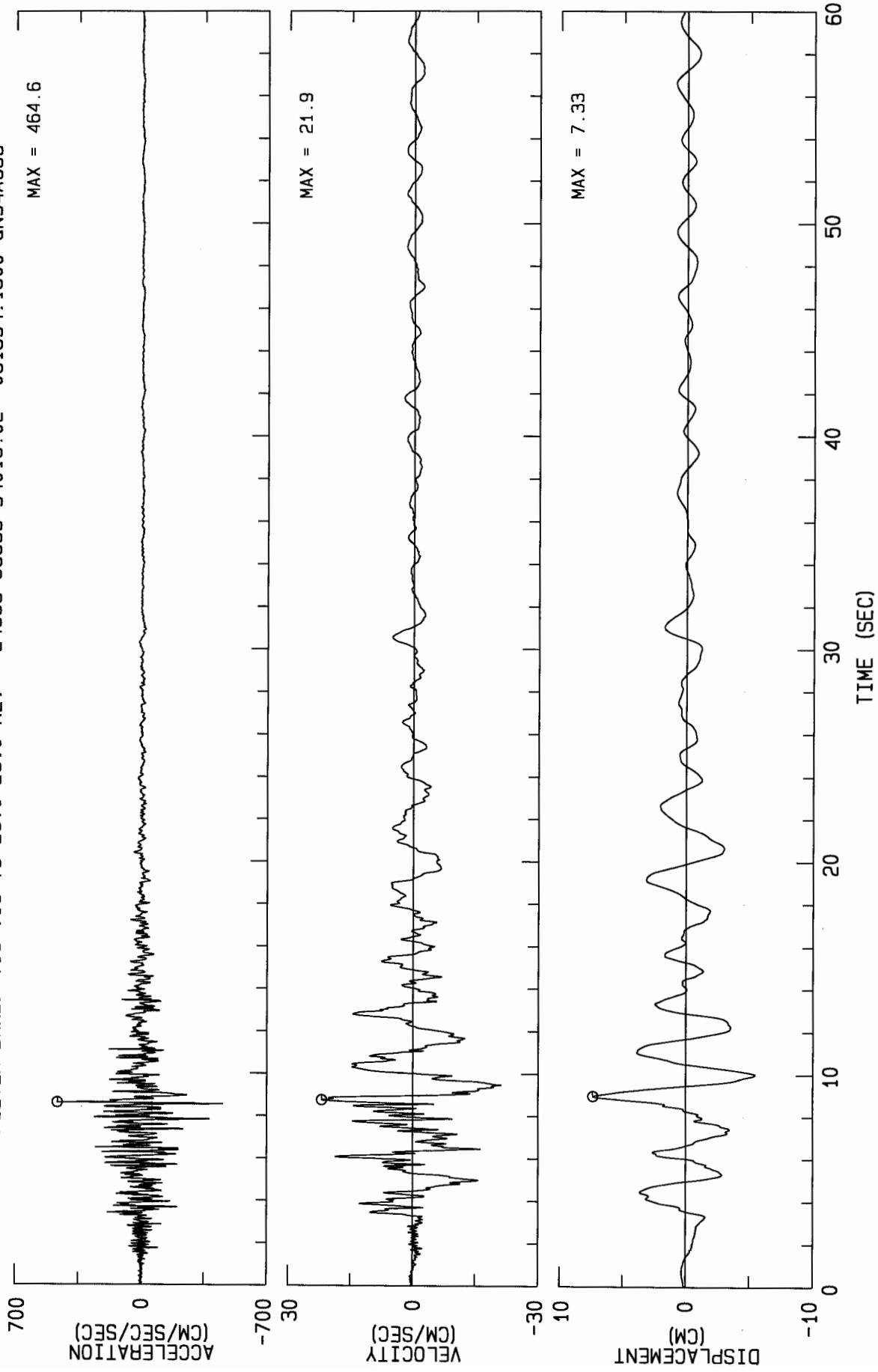
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LOS ANGELES - UCLA GROUNDS CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 24688-S3399-94018.02 031594.1500-QN94A688



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - UCLA GROUNDS CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 24688-S3399-940118.02 031594.1500-QN94A688

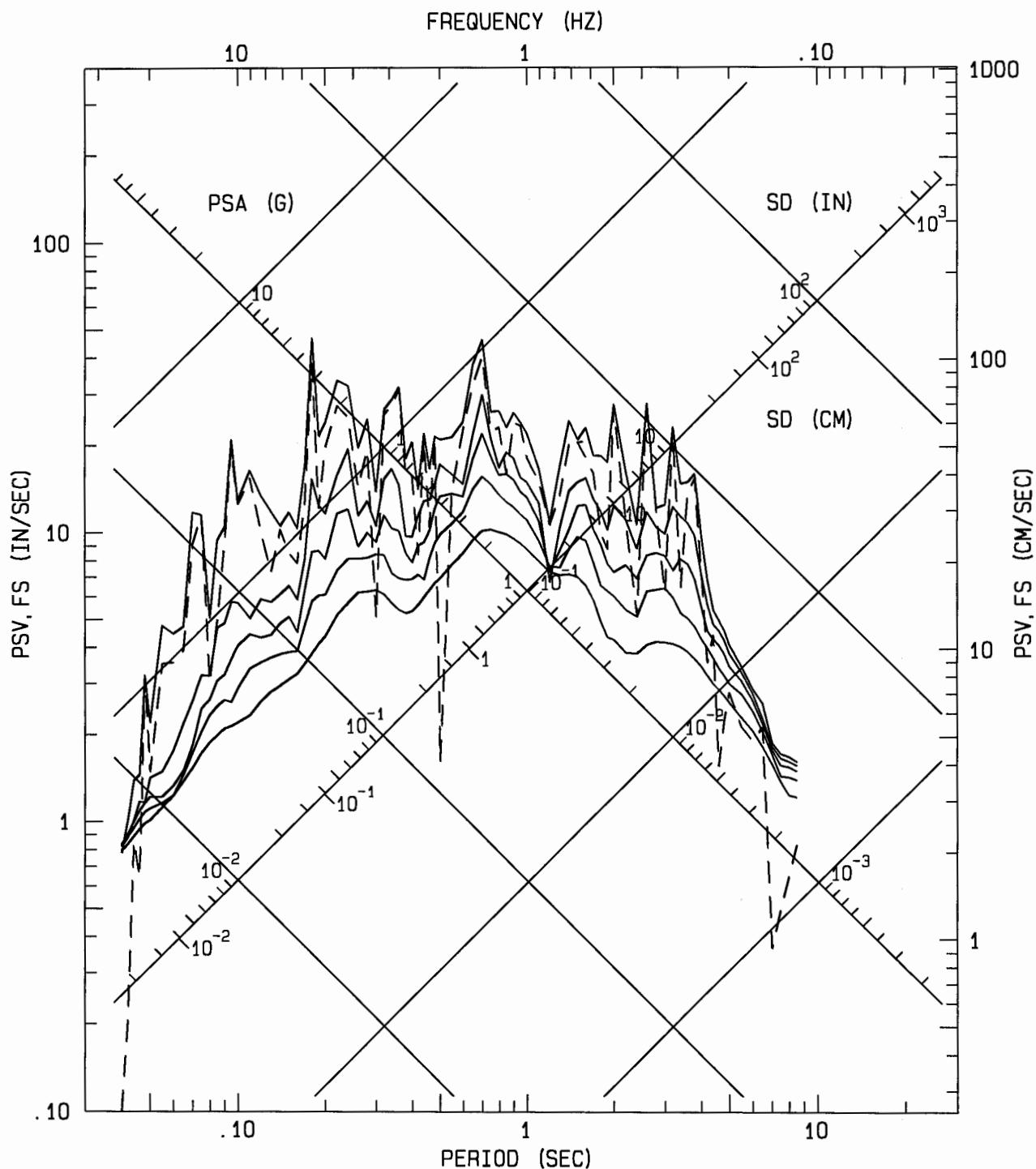


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - UCLA GROUNDS CHN 3: 360 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 24688-S3399-94018.02 031594.1500-QNG94A688



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 LOS ANGELES - UCLA GROUNDS
 CHN 1: 90 DEG
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 24688-S3399-94018.02 042594.1042-QN94A688

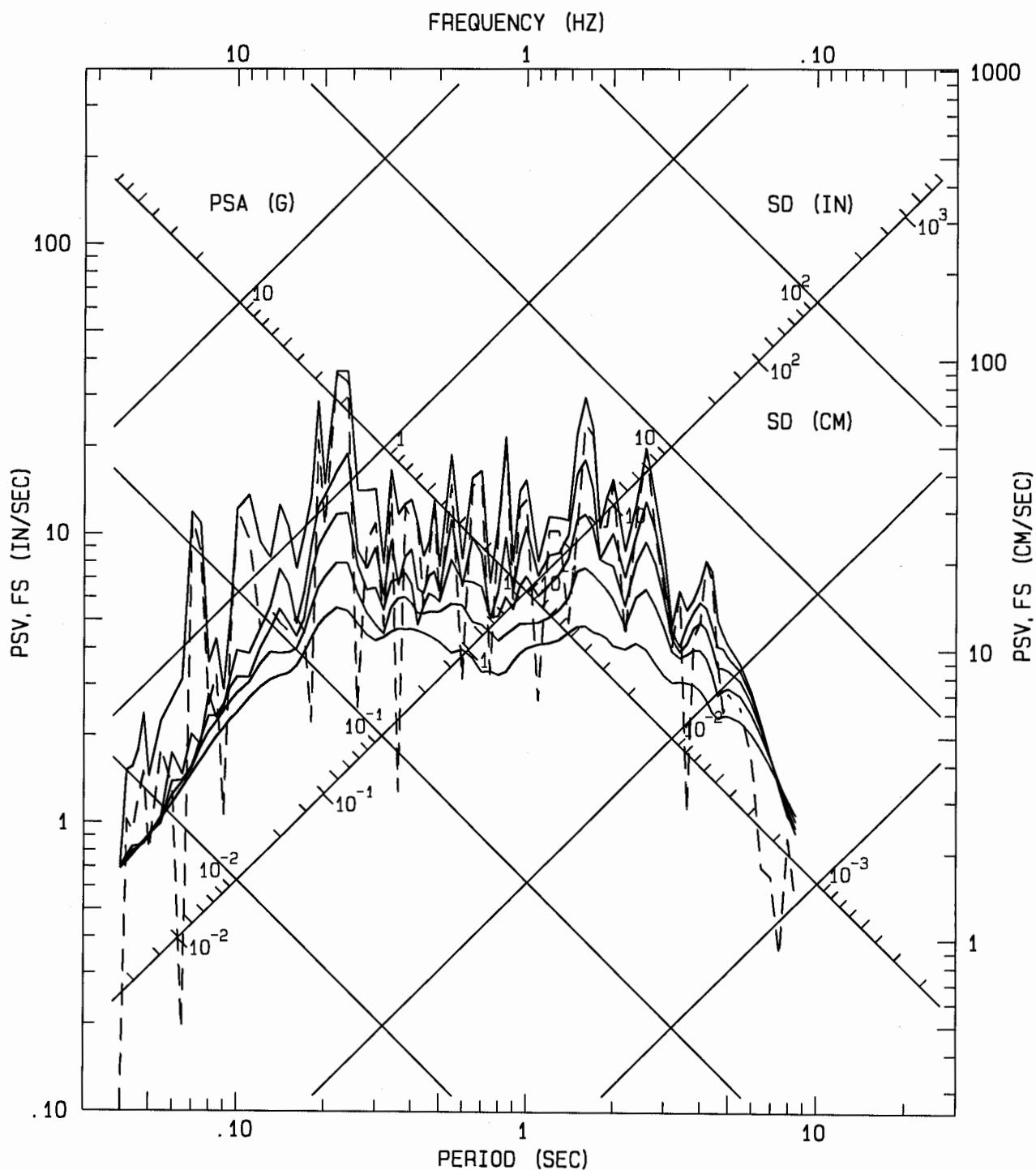
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 DAMPING VALUES: 0, 2, 5, 10, 20%



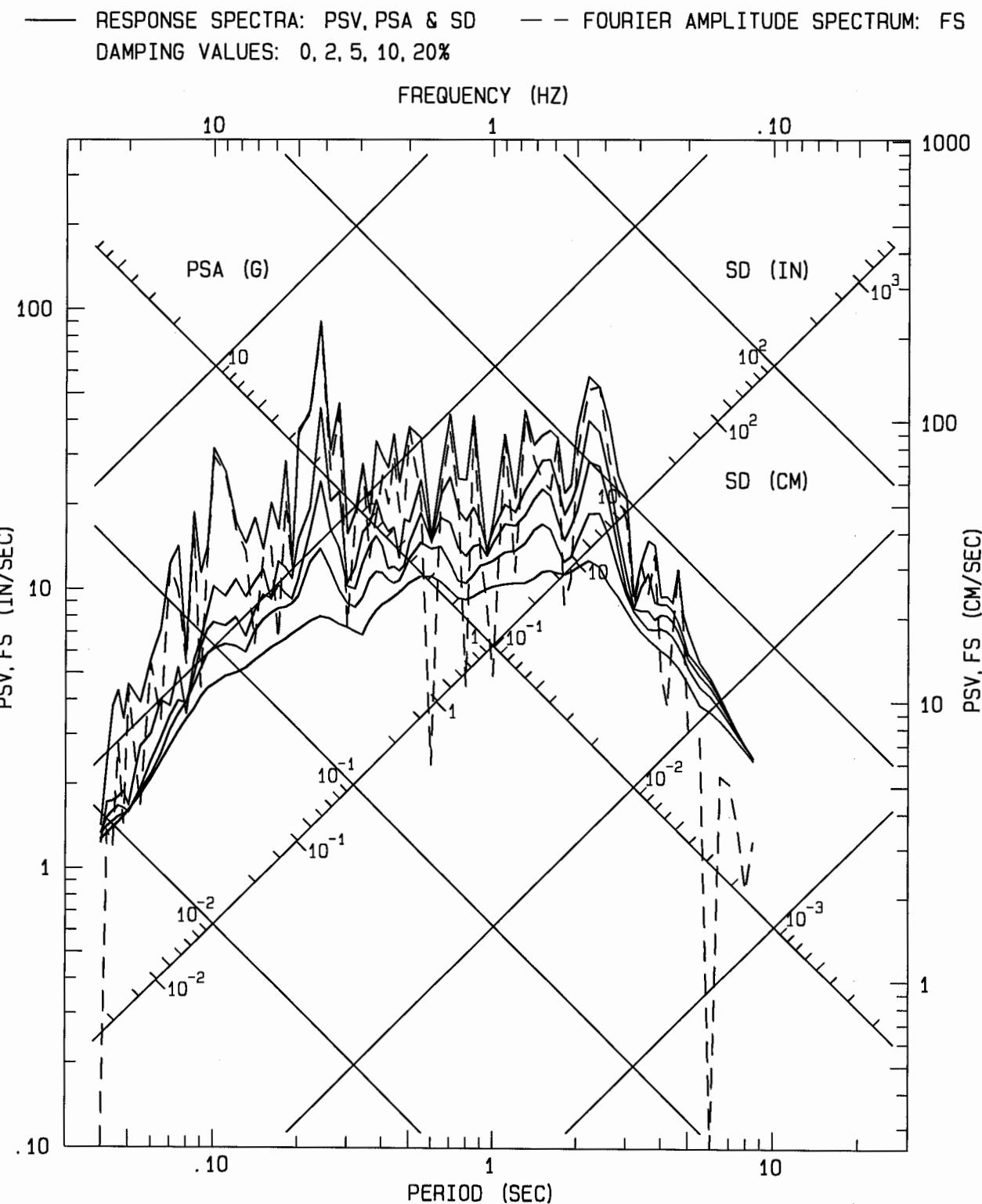
NORTHridge EARTHQUAKE JANUARY 17, 1994 04:31 PST
 LOS ANGELES - UCLA GROUNDS
 CHN 2: UP

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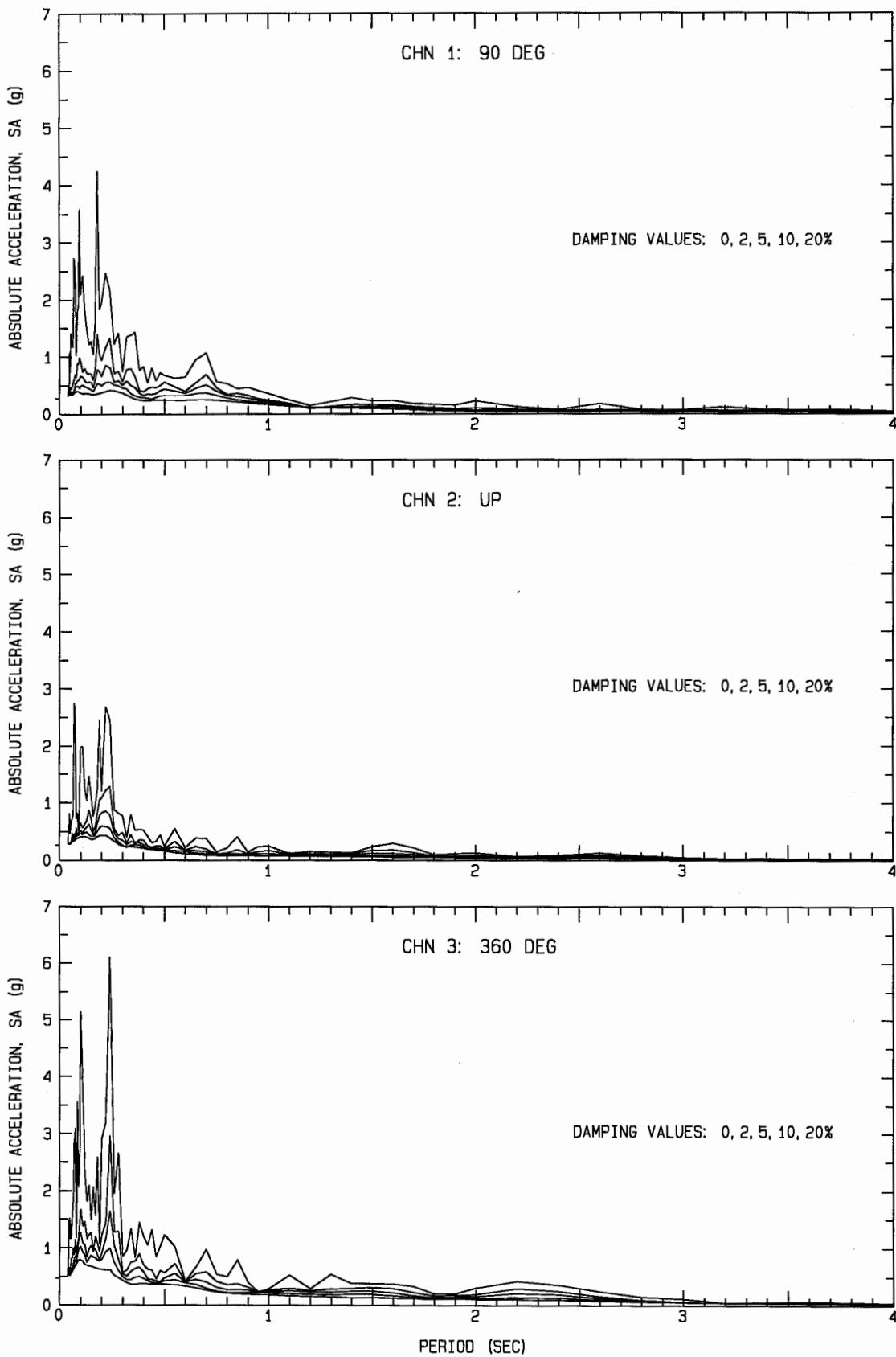
— RESPONSE SPECTRA: PSV, PSA & SD — — FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%

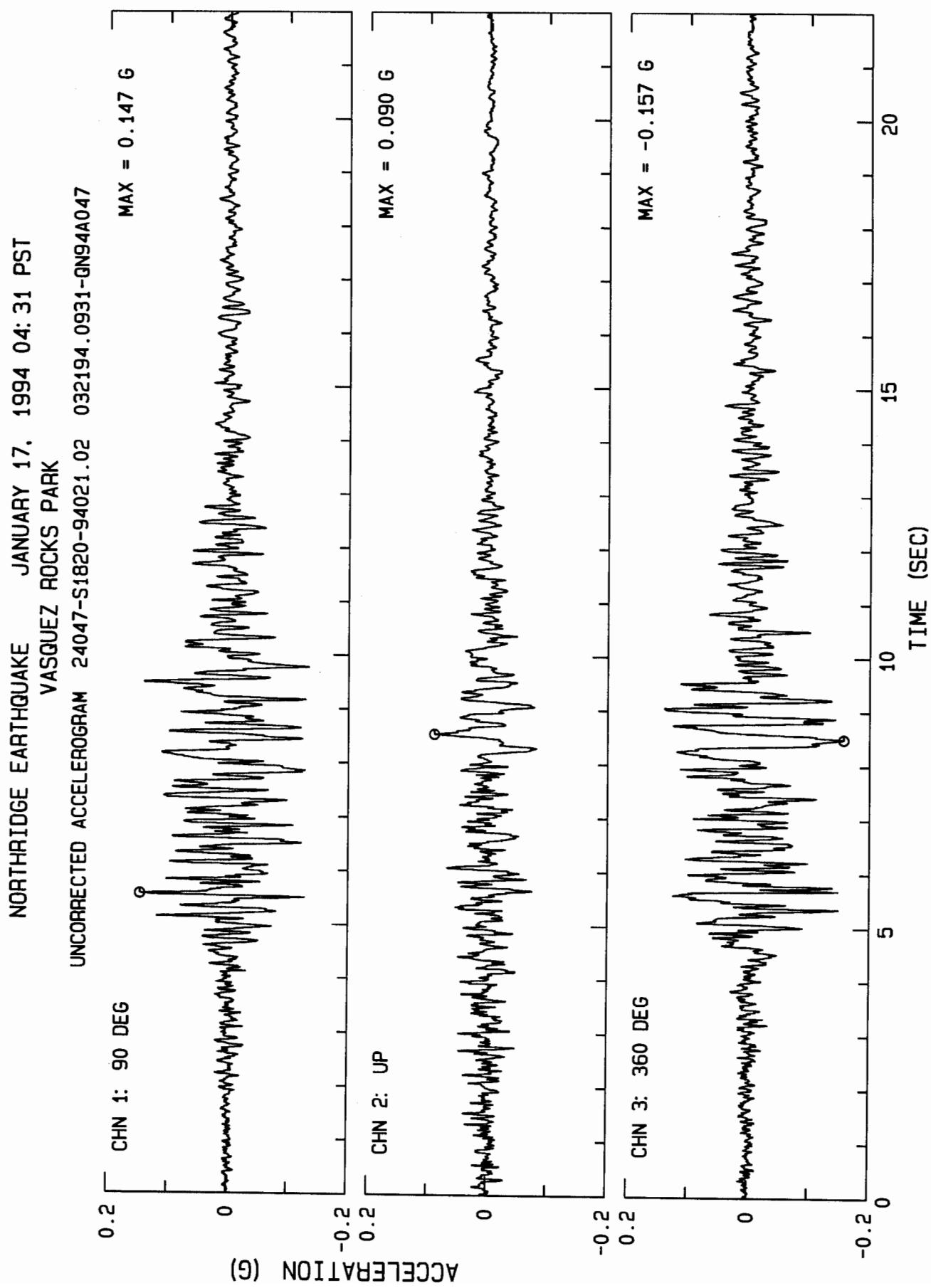


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 LOS ANGELES - UCLA GROUNDS
 CHN 3: 360 DEG
 ACCELEROGRAF BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 Hz.
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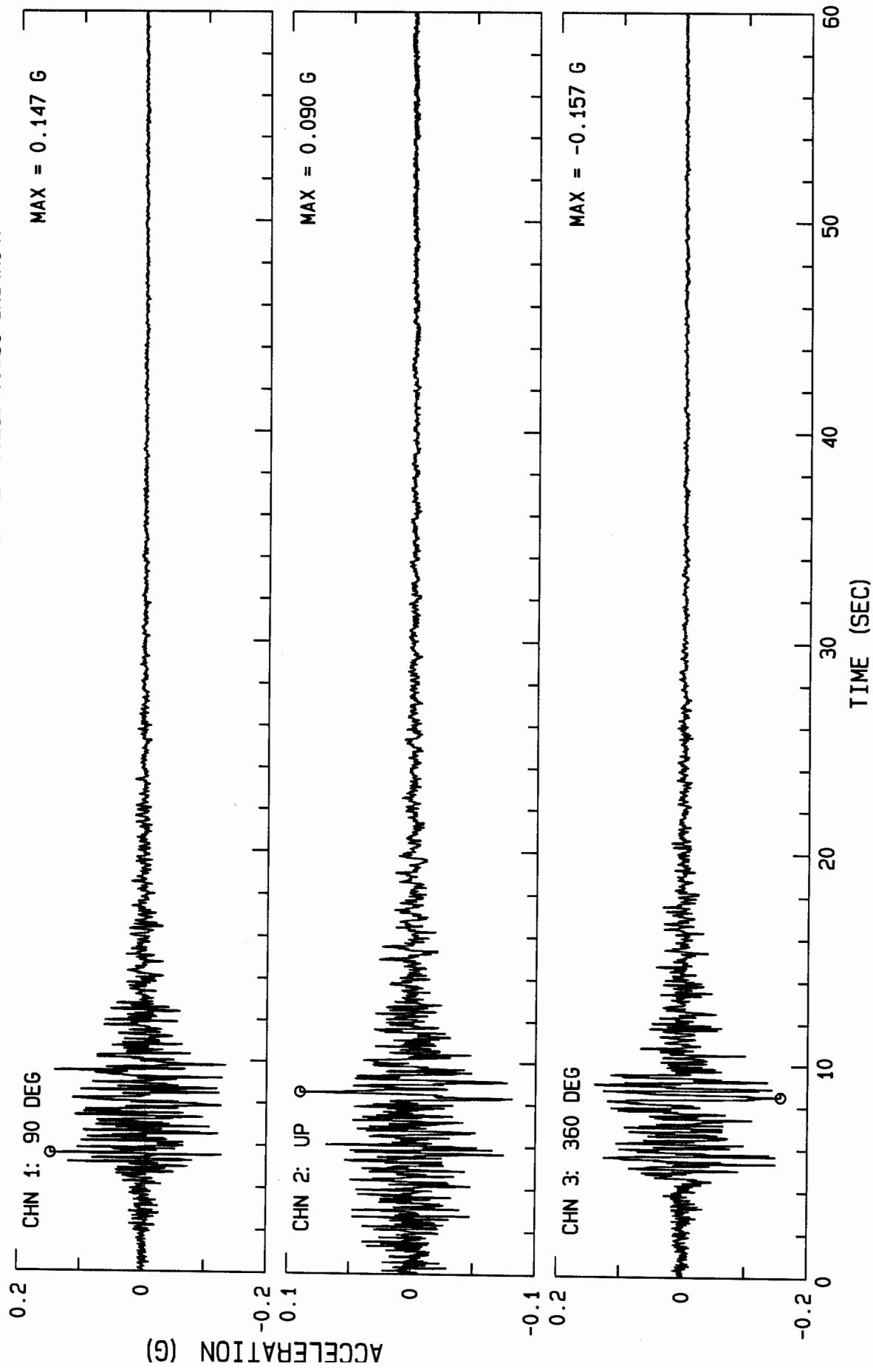


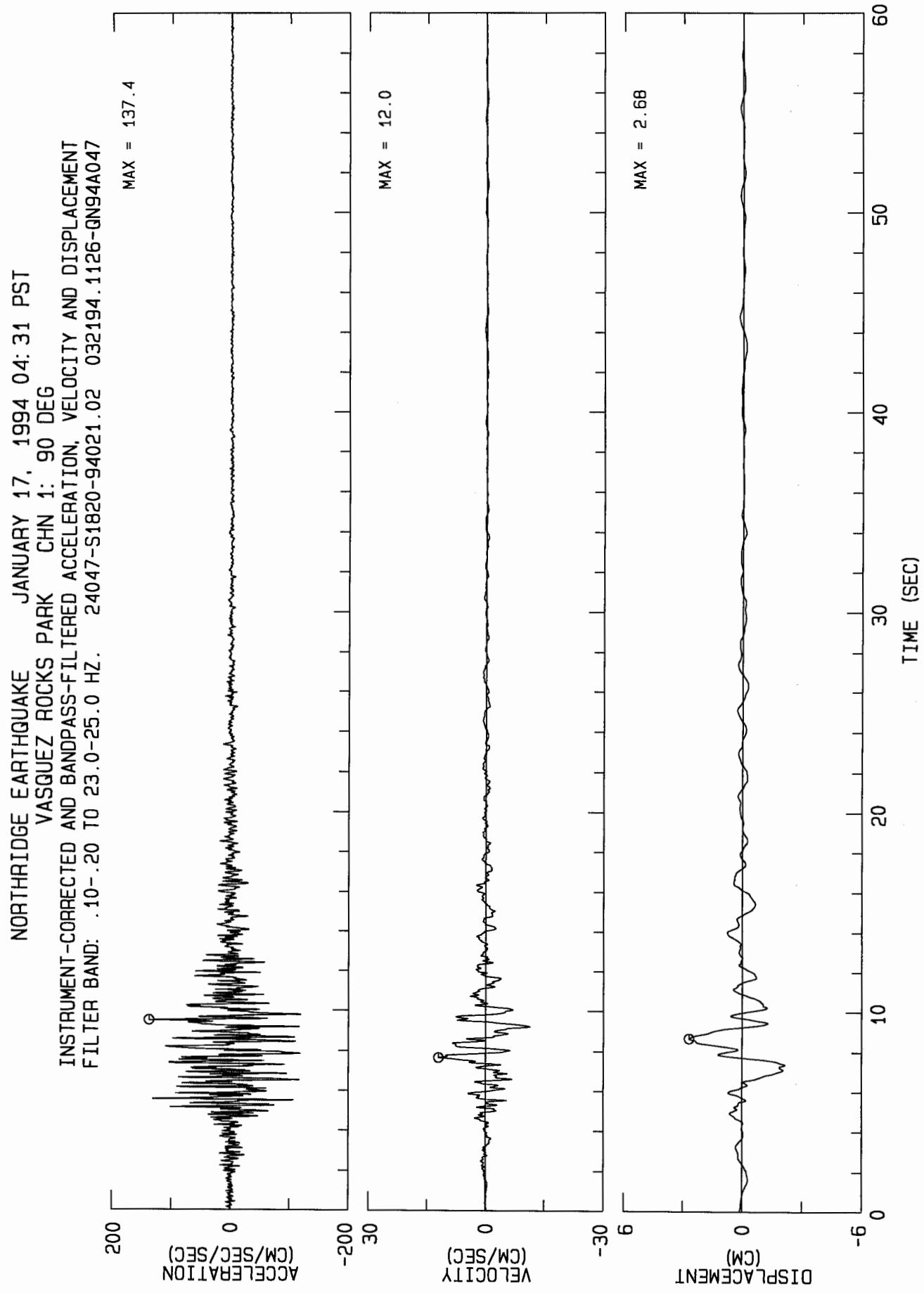
NORTHridge EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - UCLA GROUNDS
ACCELEROGRAm BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 Hz.
24688-S3399-94018.02 042594.1042-QN94A688



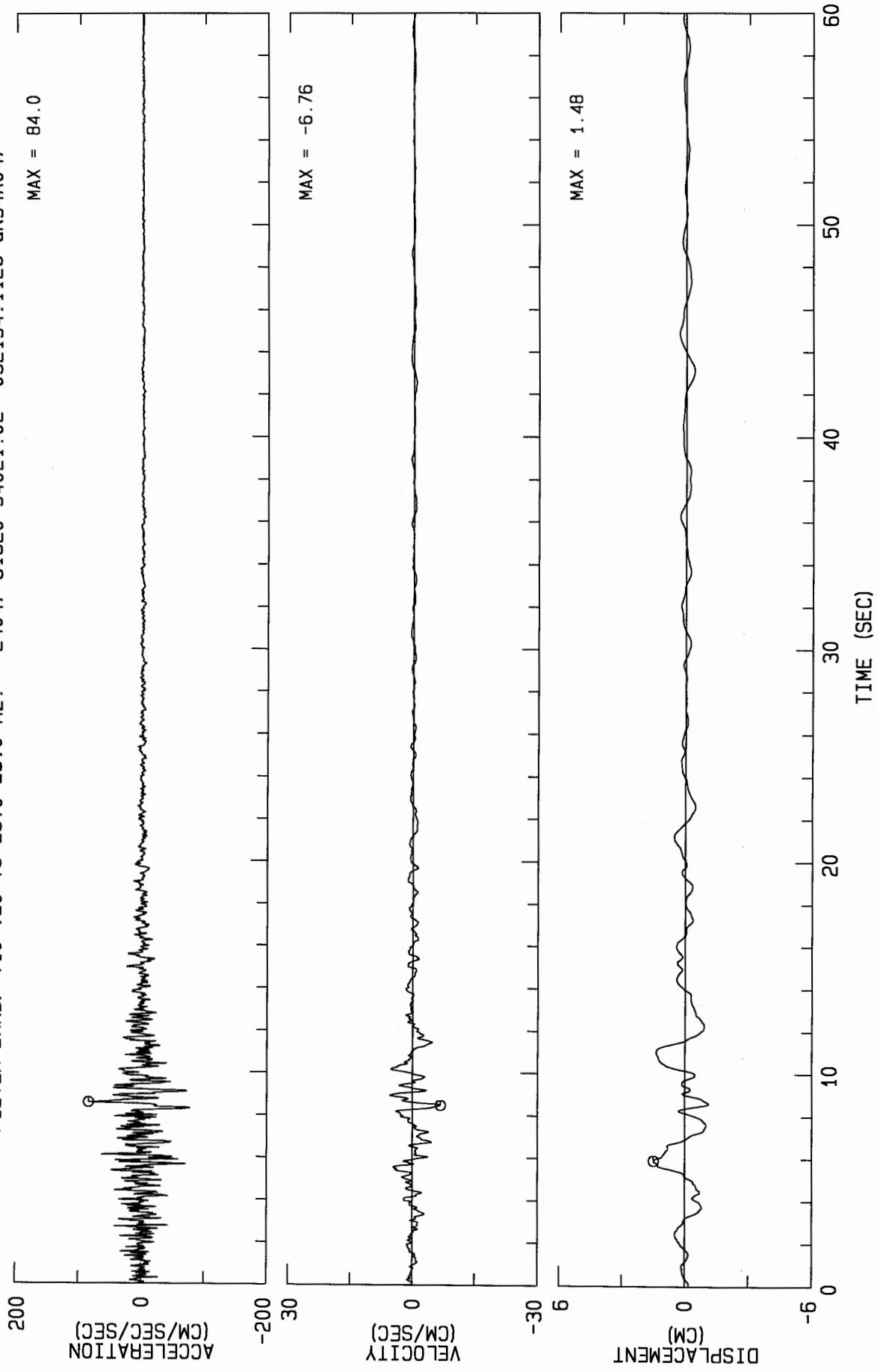


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
VASQUEZ ROCKS PARK
UNCORRECTED ACCELERGRAM 24047-S1820-94021.02 032194.0931-0N94A047

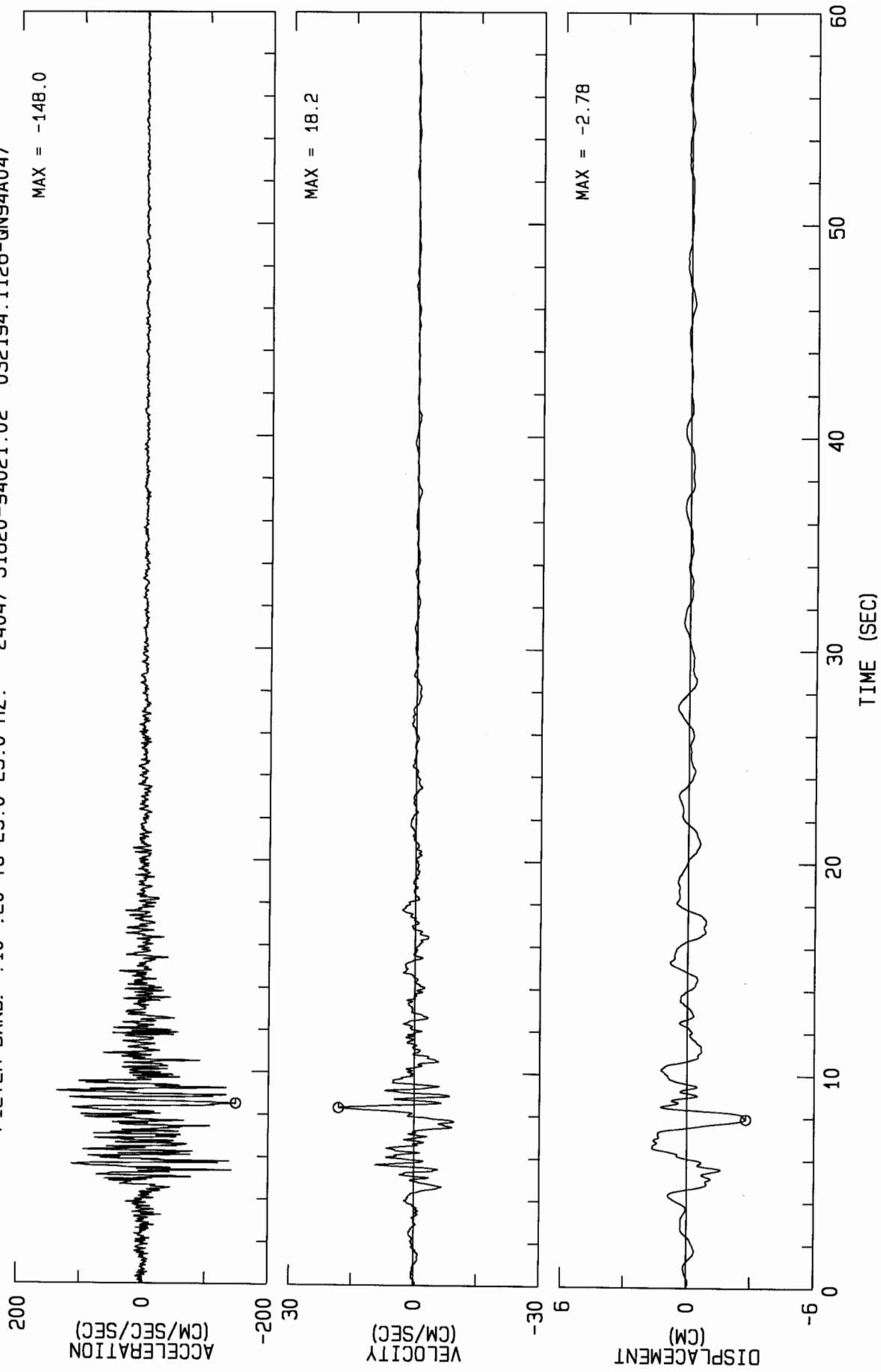




NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
VASQUEZ ROCKS PARK CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .10-.20 TO 23.0-25.0 HZ. 24047-S1820-94021.02 032194.1126-QN94A047

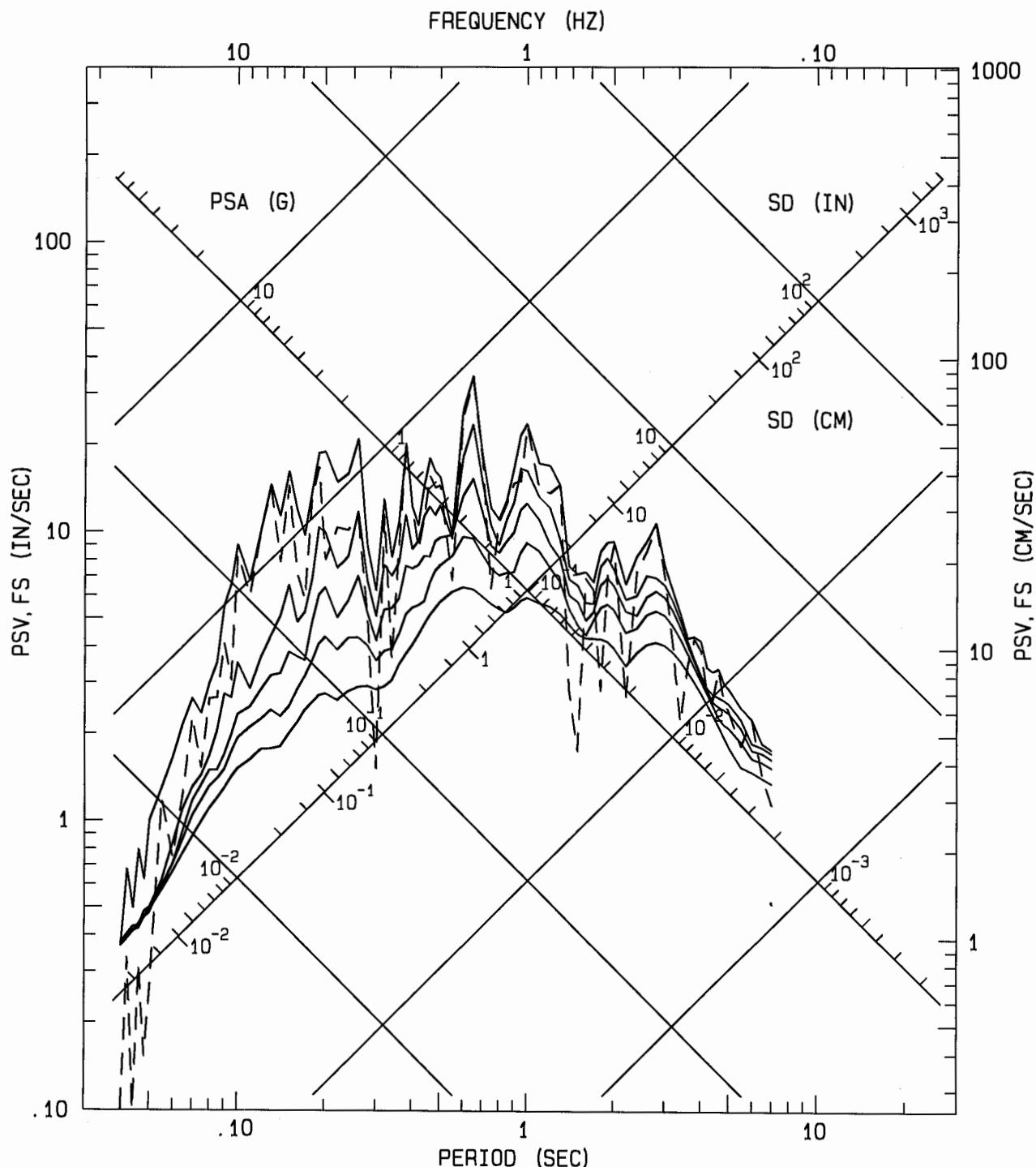


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
VASQUEZ ROCKS PARK CHN 3: 360 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .10 - .20 TO 23.0-25.0 HZ. 24047-S1820-94021.02 032194.1126-QN94A047



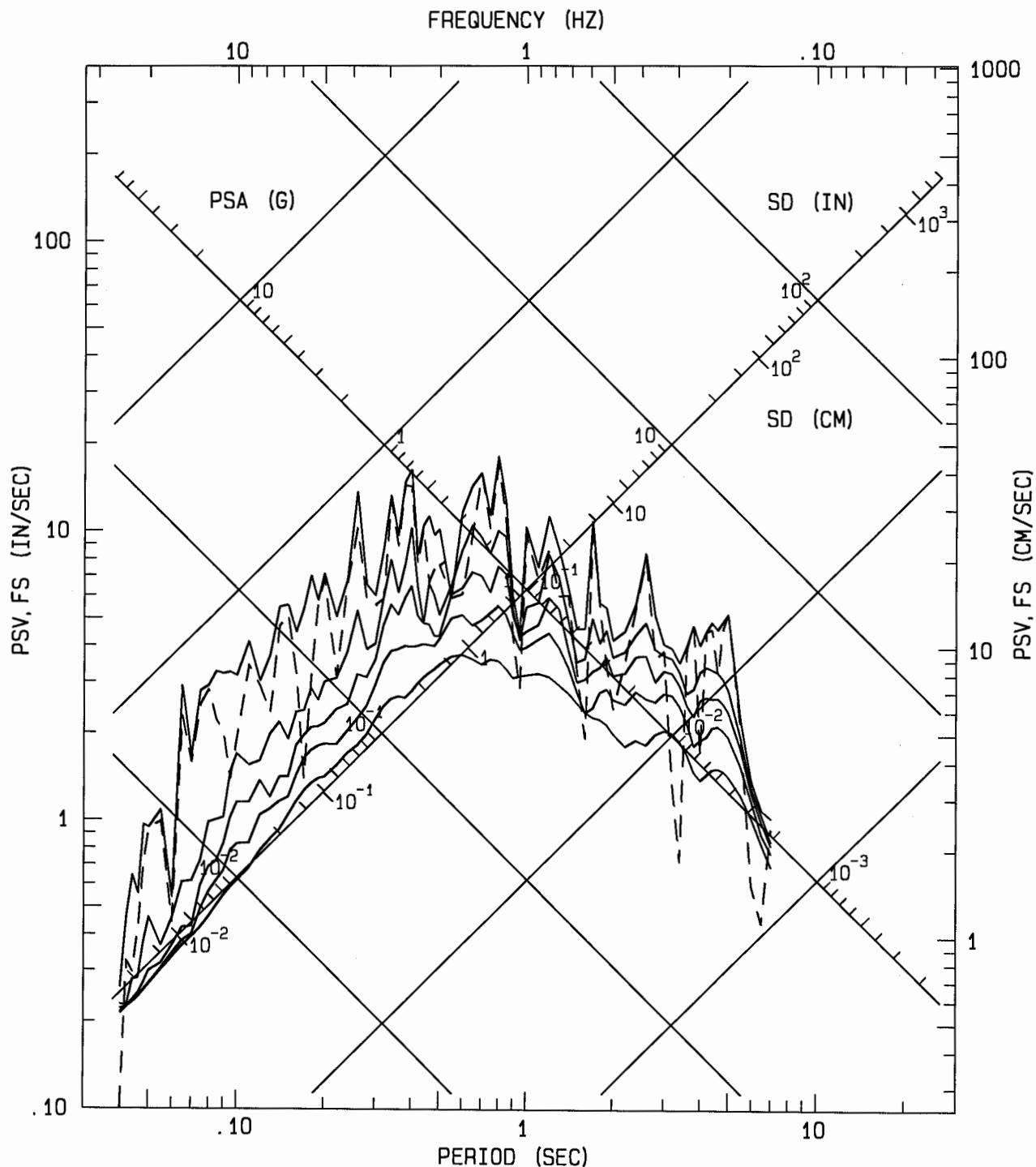
NORTHridge EARTHQUAKE JANUARY 17, 1994 04:31 PST
 VASQUEZ ROCKS PARK
 CHN 1: 90 DEG
 ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .10-.20 TO 23.0-25.0 Hz.
 24047-S1820-94021.02 042594.1010-QN94A047

— RESPONSE SPECTRA: PSV, PSA & SD — — FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



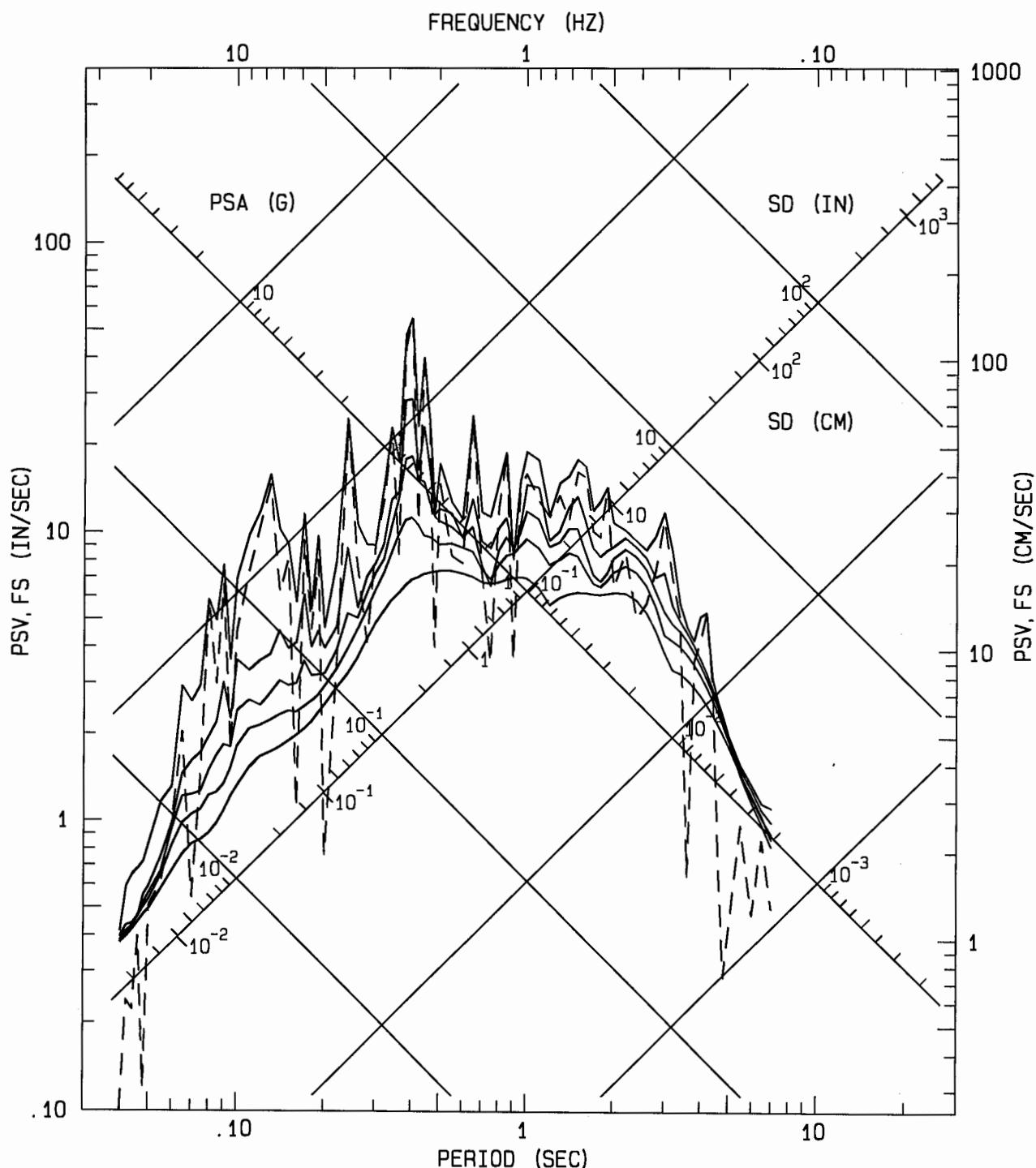
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 VASQUEZ ROCKS PARK
 CHN 2: UP
 ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .10-.20 TO 23.0-25.0 Hz.
 24047-S1820-94021.02 042594.1010-QN94A047

— RESPONSE SPECTRA: PSV, PSA & SD —— FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%

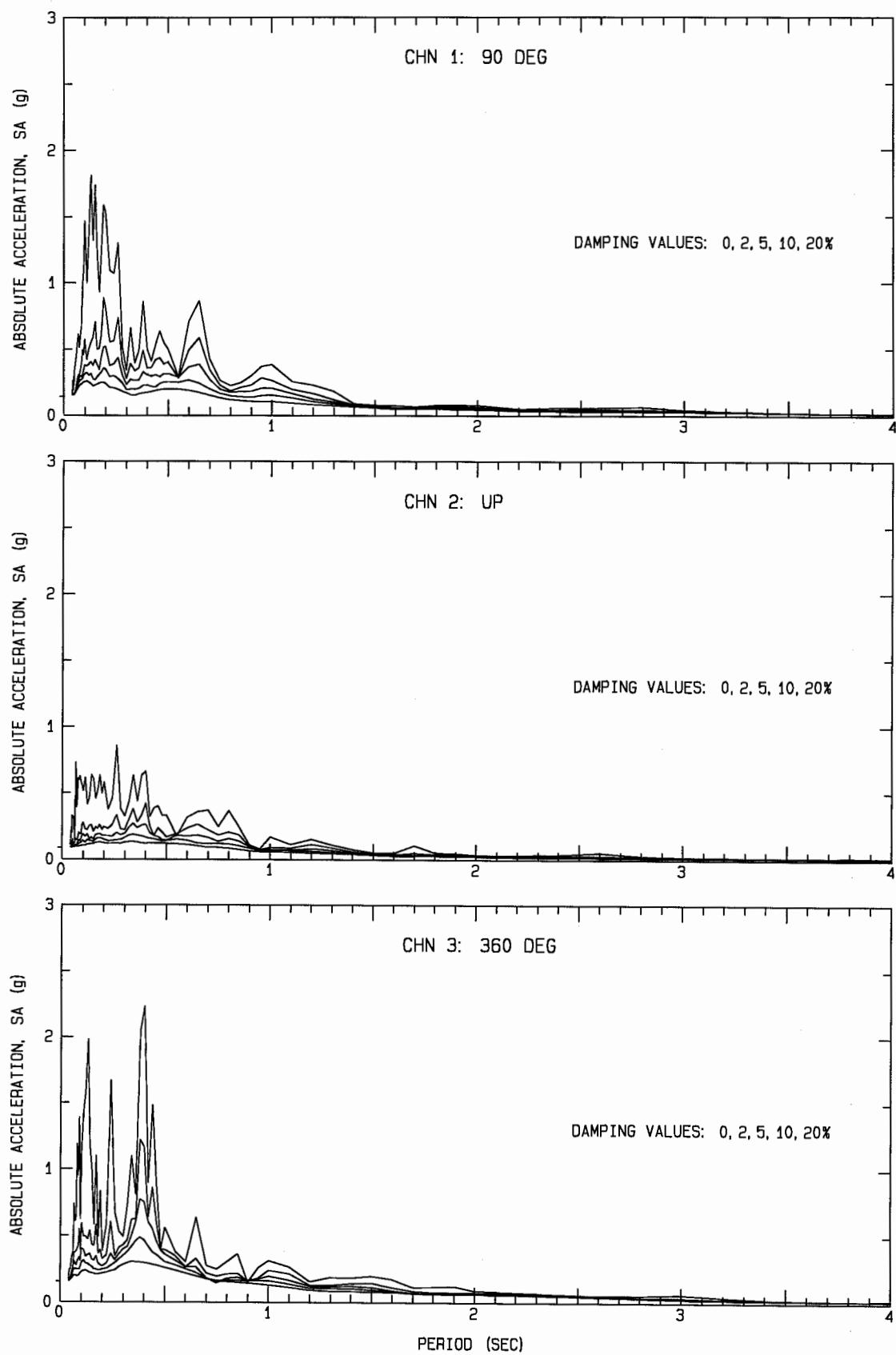


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 VASQUEZ ROCKS PARK
 CHN 3: 360 DEG
 ACCELEROGRAF BANDPASS-FILTERED WITH RAMPS AT .10-.20 TO 23.0-25.0 Hz.
 24047-S1820-94021.02 042594.1010-QN94A047

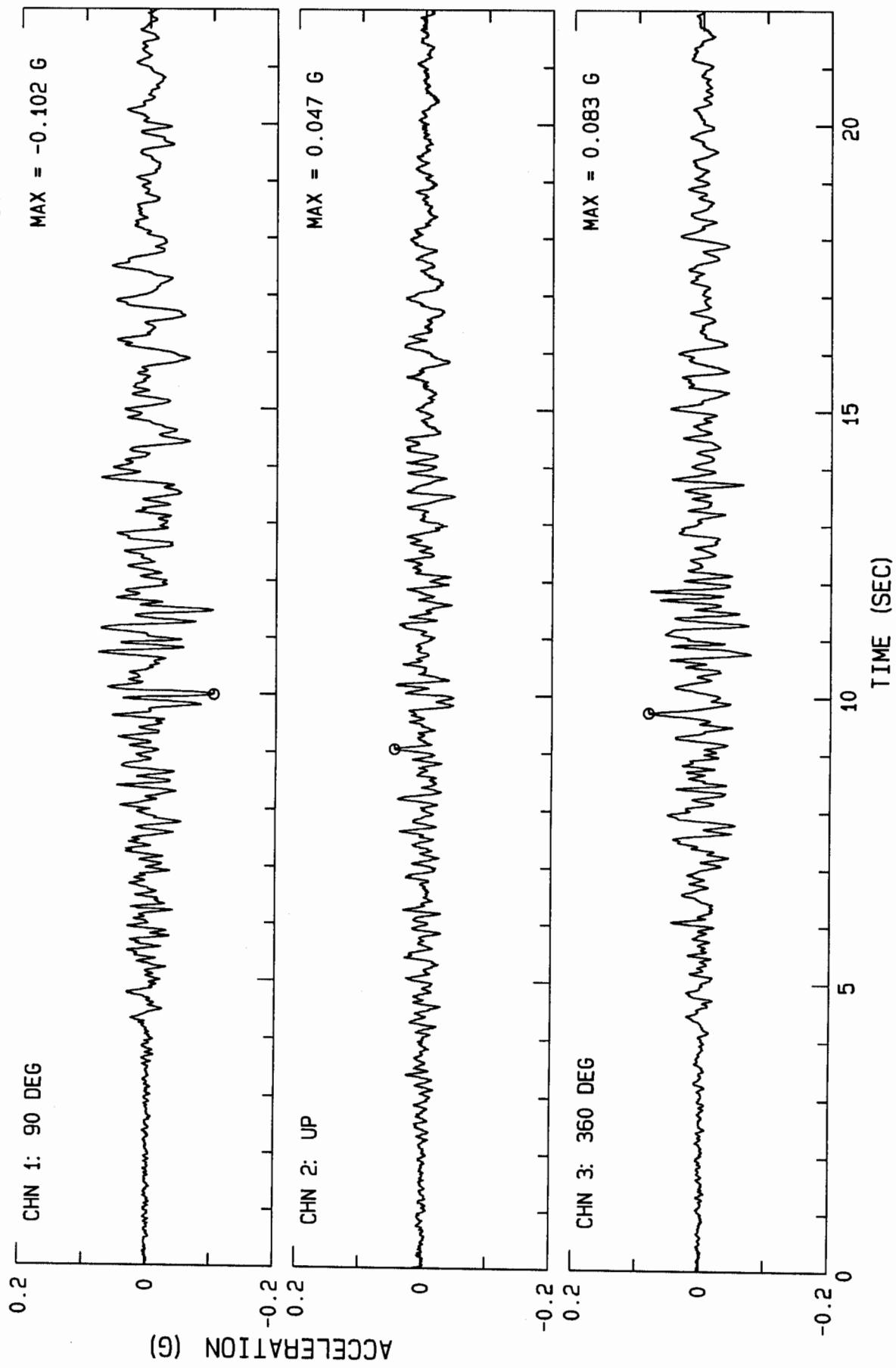
— RESPONSE SPECTRA: PSV, PSA & SD — — FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



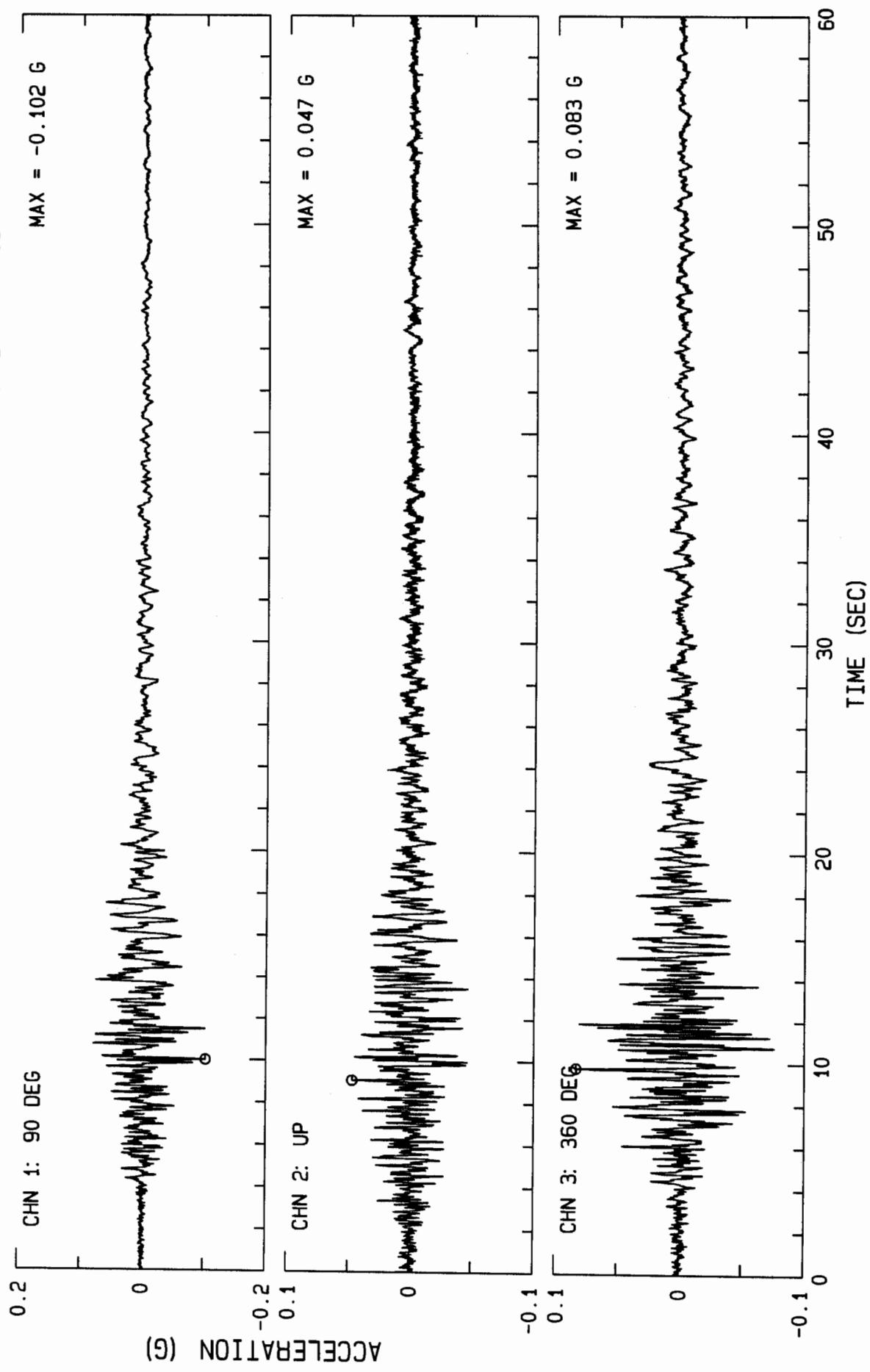
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
VASQUEZ ROCKS PARK
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .10-.20 TO 23.0-25.0 HZ.
24047-S1820-94021.02 042594.1010-QN94A047

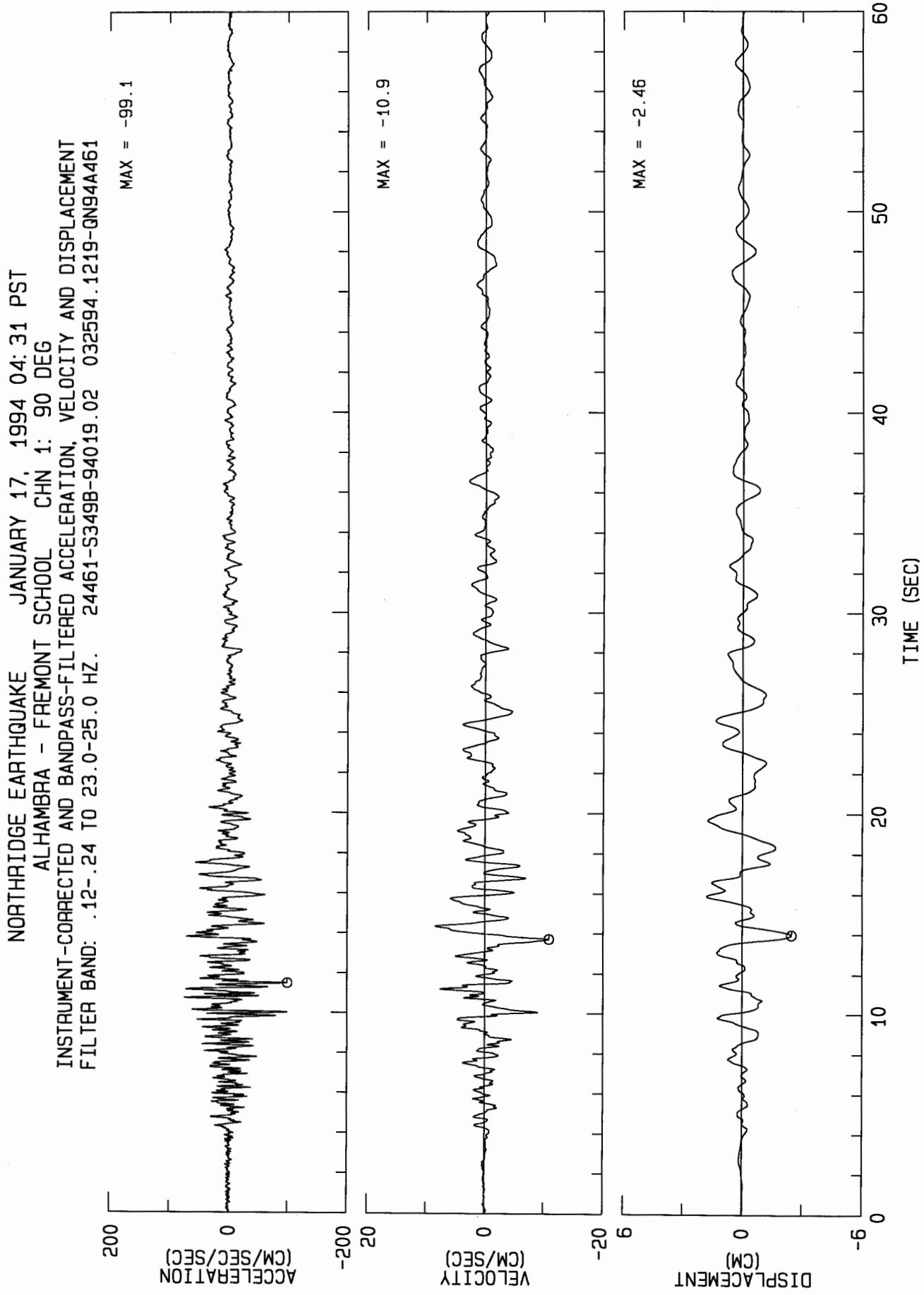


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04: 31 PST
ALHAMBRA - FREMONT SCHOOL
UNCORRECTED ACCELERPROGRAM 24461-S3498-94019.02 032594.0929-QN94A461

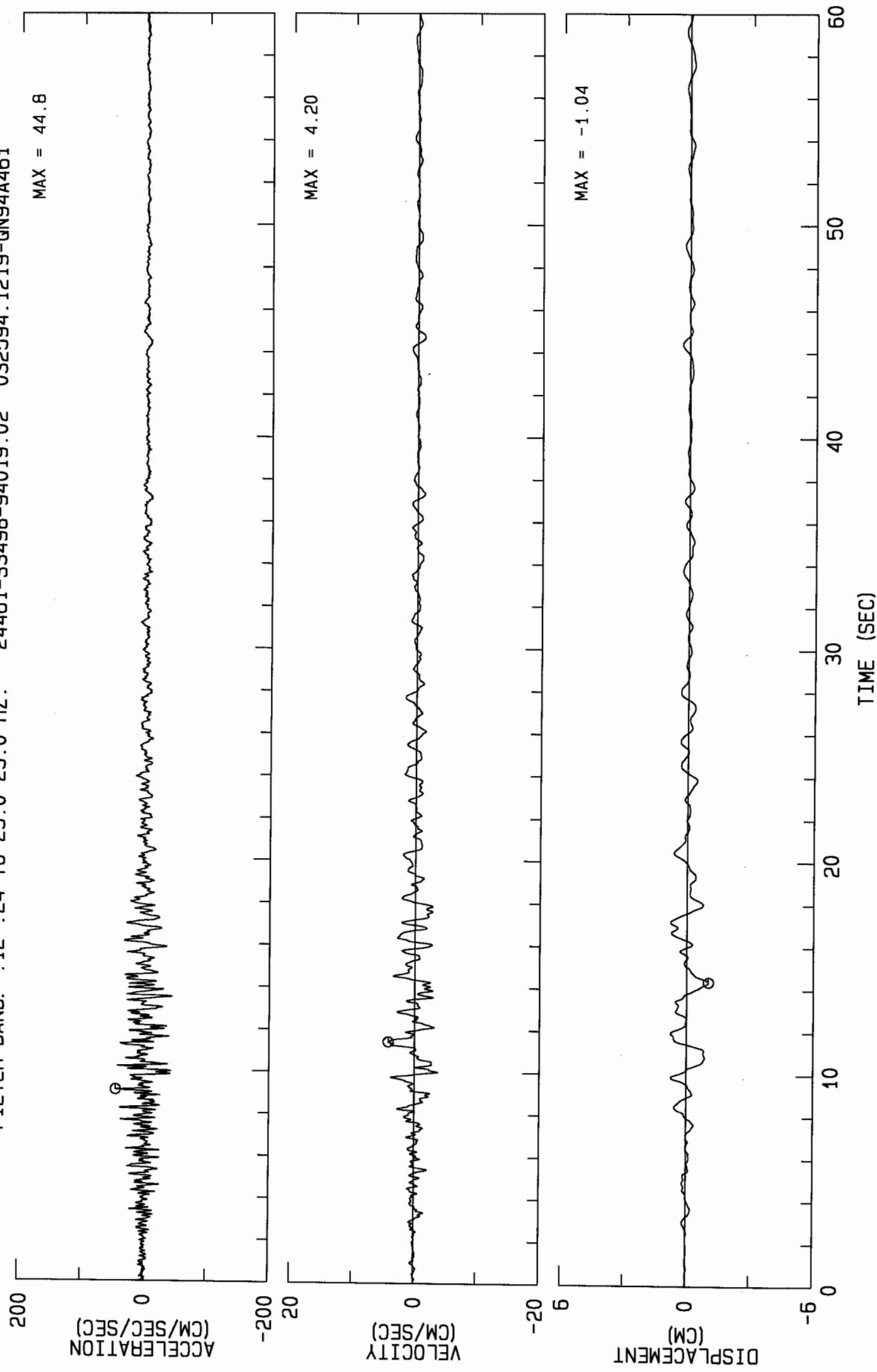


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
ALHAMBRA - FREMONT SCHOOL
UNCORRECTED ACCELERGRAM 24461-S3498-94019.02 032594.0929-QN94A461

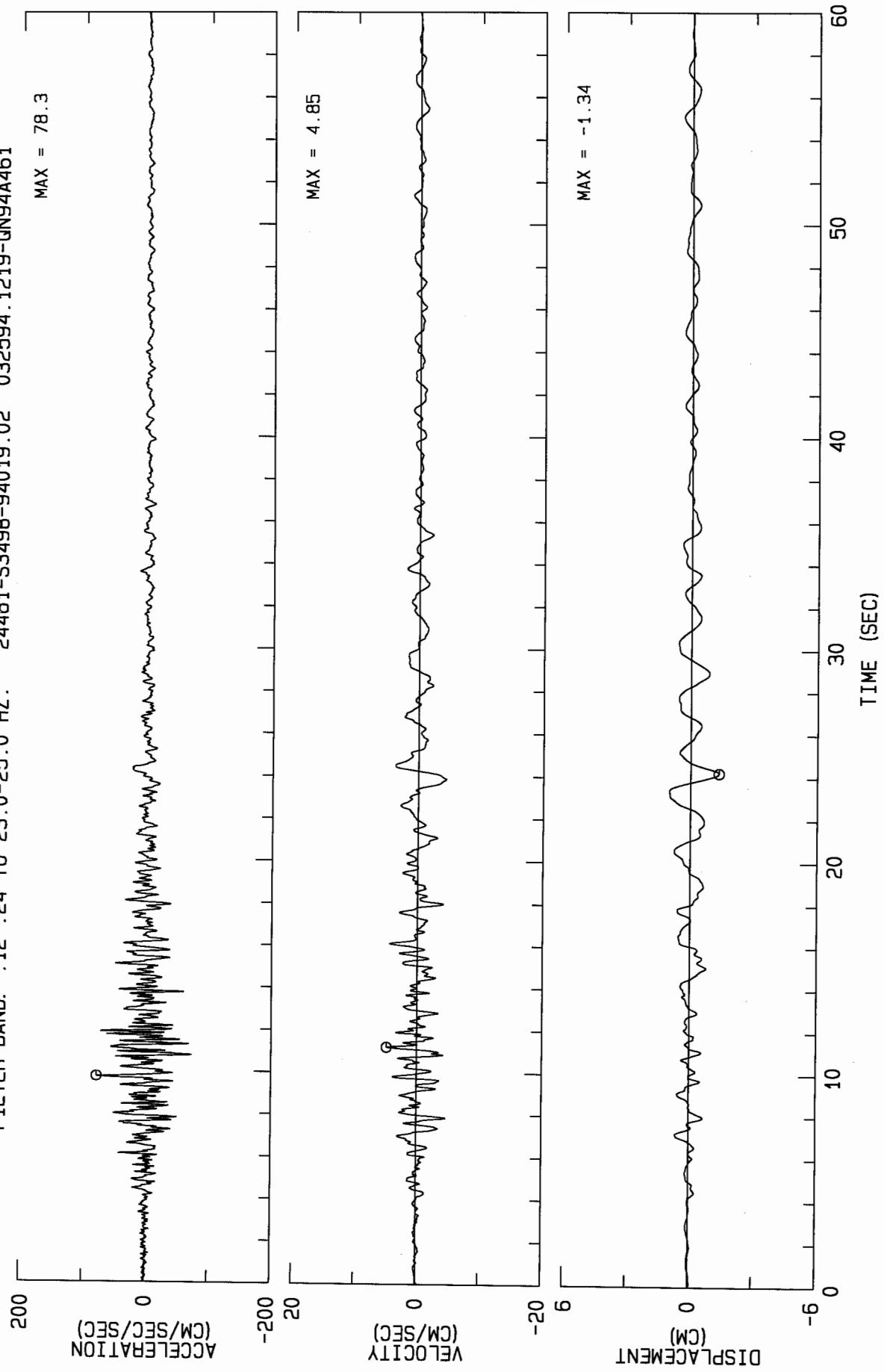




NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
ALHAMBRA - FREMONT SCHOOL CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .12-.24 TO 23.0-25.0 HZ. 24461-S349B-94019.02 032594.1219-QN94A461

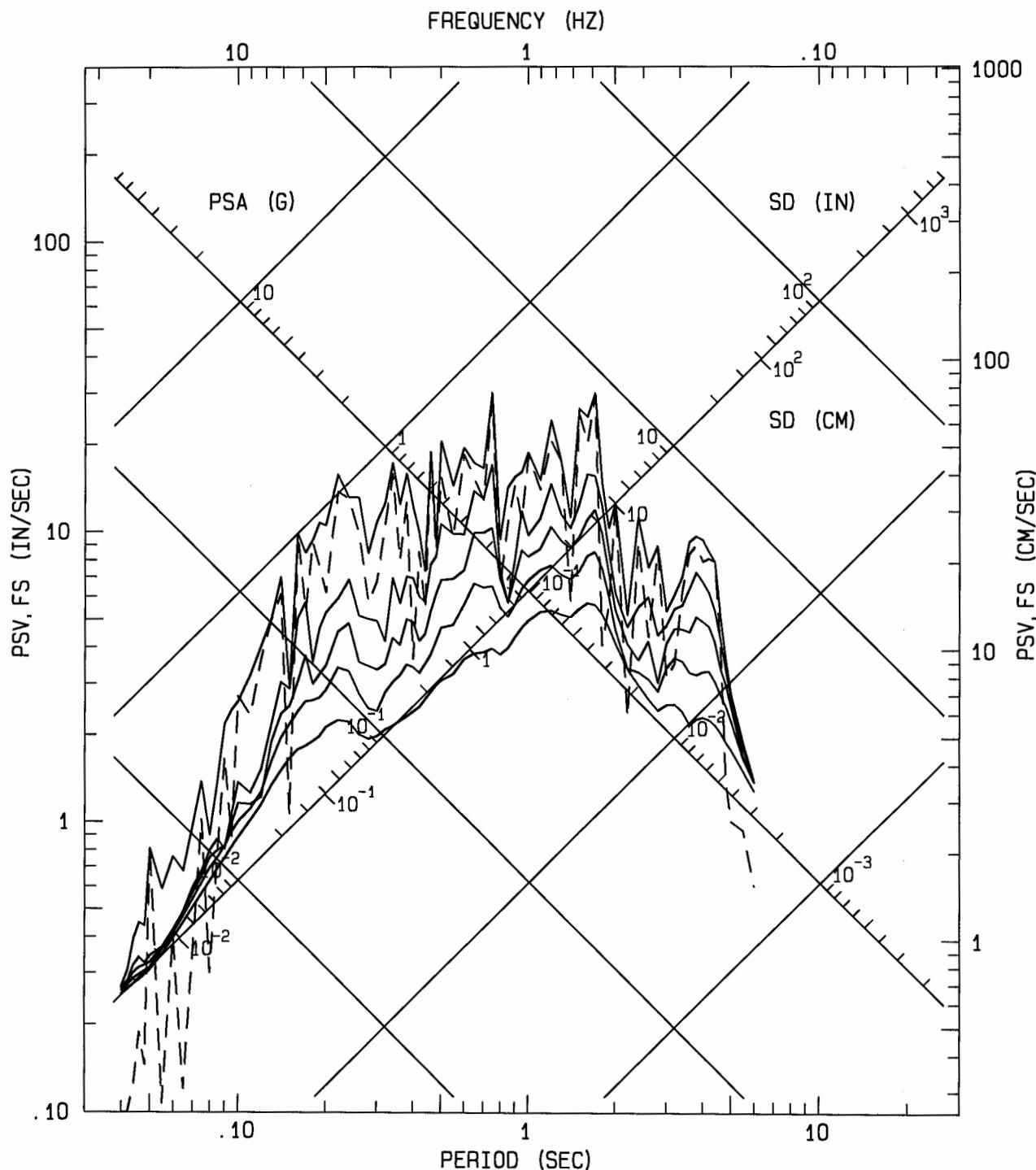


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
ALHAMBRA - FREMONT SCHOOL CHN 3: 360 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .12-.24 TO 23.0-25.0 HZ. 24461-S349B-94019.02 032594.1219-GN94A461



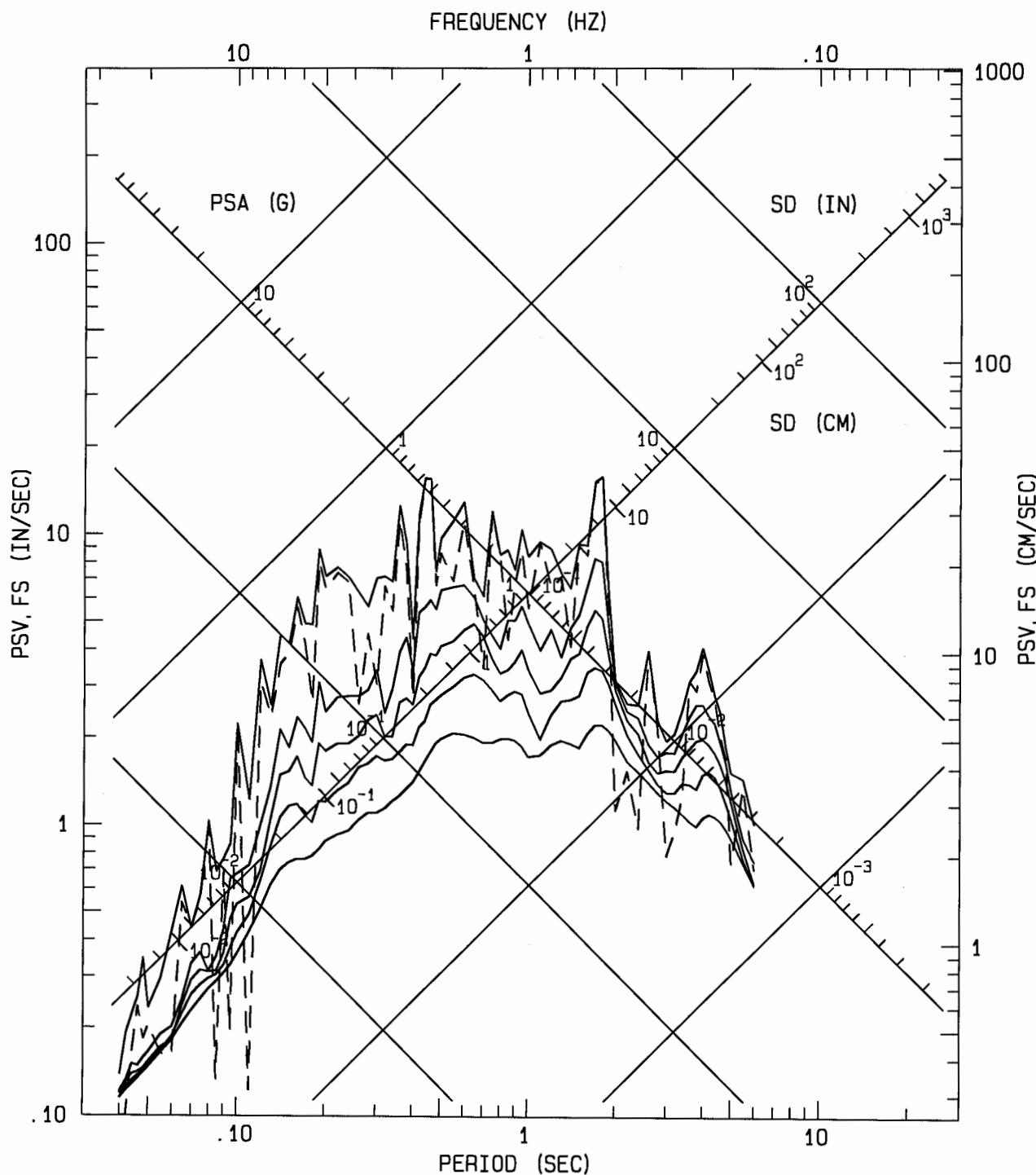
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 ALHAMBRA - FREMONT SCHOOL
 CHN 1: 90 DEG
 ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .12-.24 TO 23.0-25.0 Hz.
 24461-S3498-94019.02 042594.1027-QN94A461

— RESPONSE SPECTRA: PSV, PSA & SD — — FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



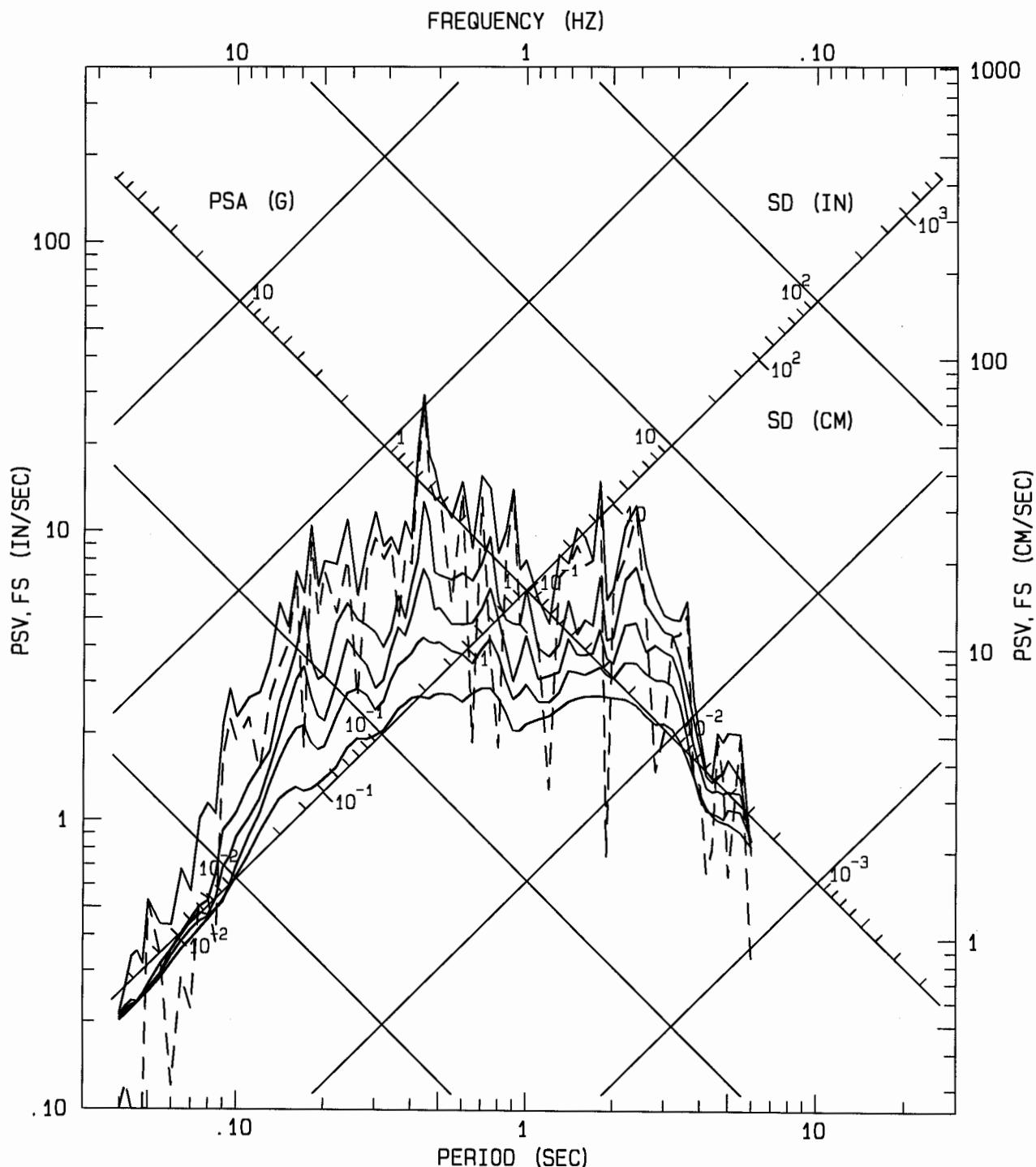
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 ALHAMBRA - FREMONT SCHOOL
 CHN 2: UP
 ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .12-.24 TO 23.0-25.0 Hz.
 24461-S3498-94019.02 042594.1027-QN94A461

— RESPONSE SPECTRA: PSV, PSA & SD — — FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%

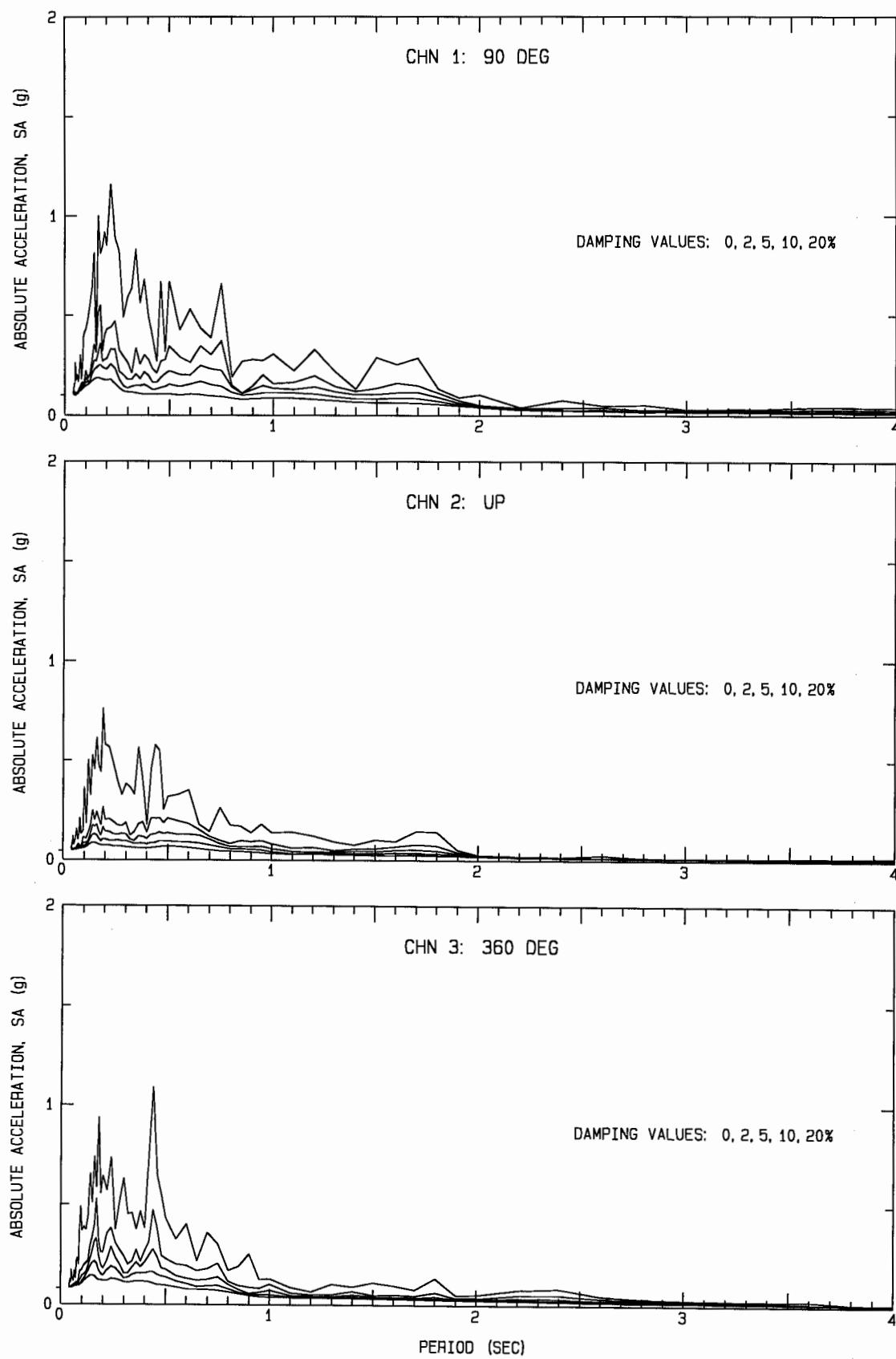


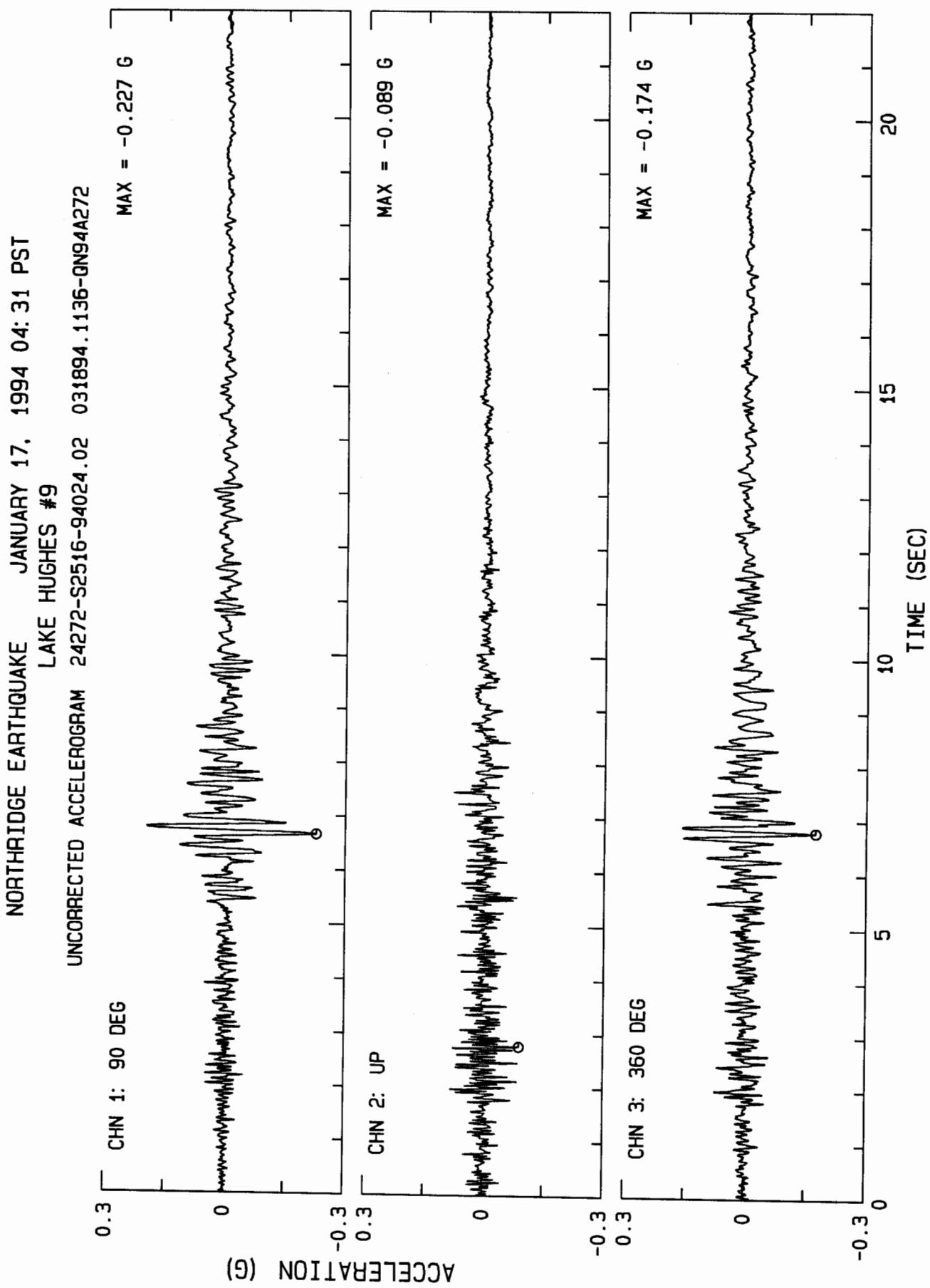
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 ALHAMBRA - FREMONT SCHOOL
 CHN 3: 360 DEG
 ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .12-.24 TO 23.0-25.0 Hz.
 24461-S3498-94019.02 042594.1027-QN94A461

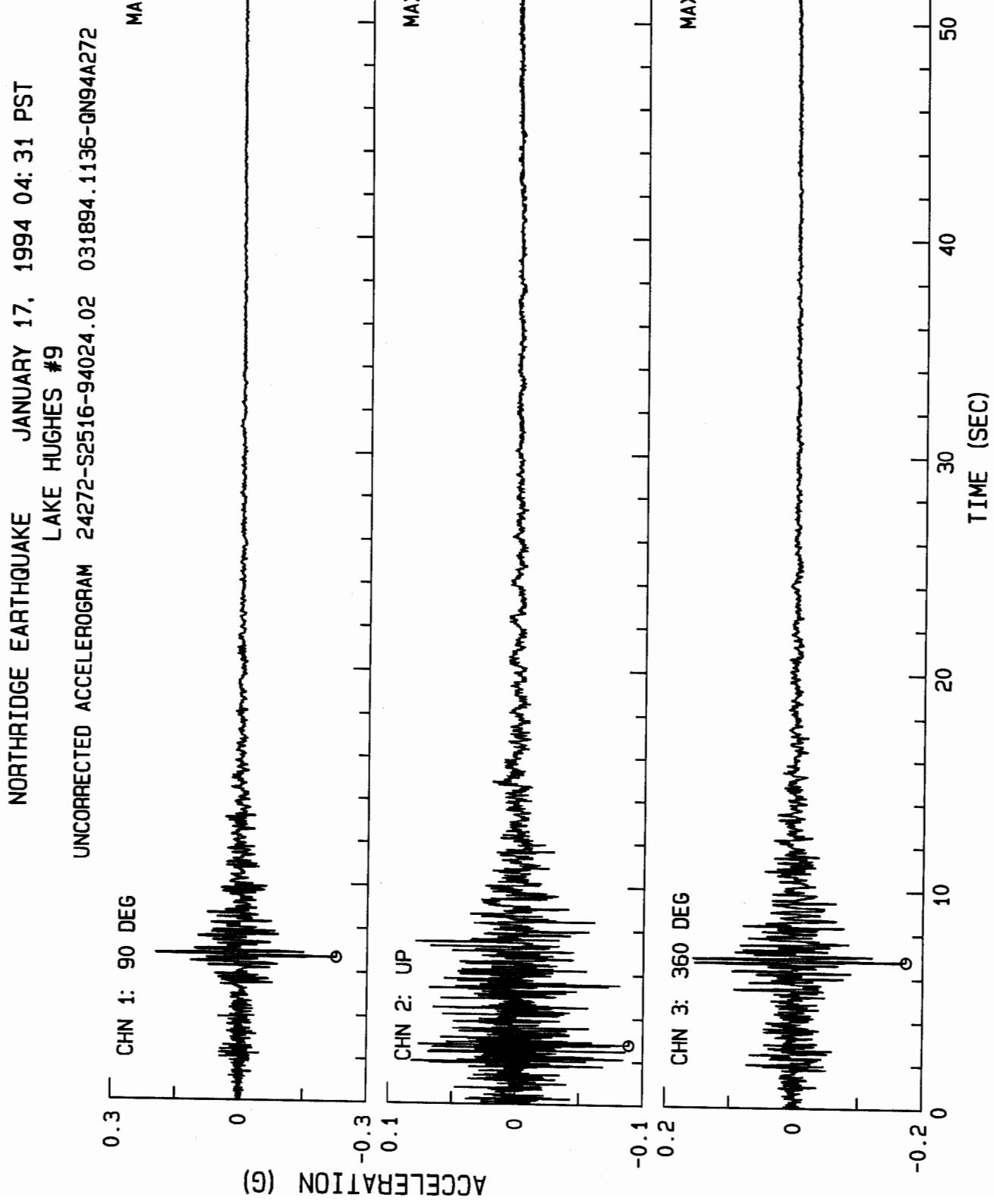
— RESPONSE SPECTRA: PSV, PSA & SD — — FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



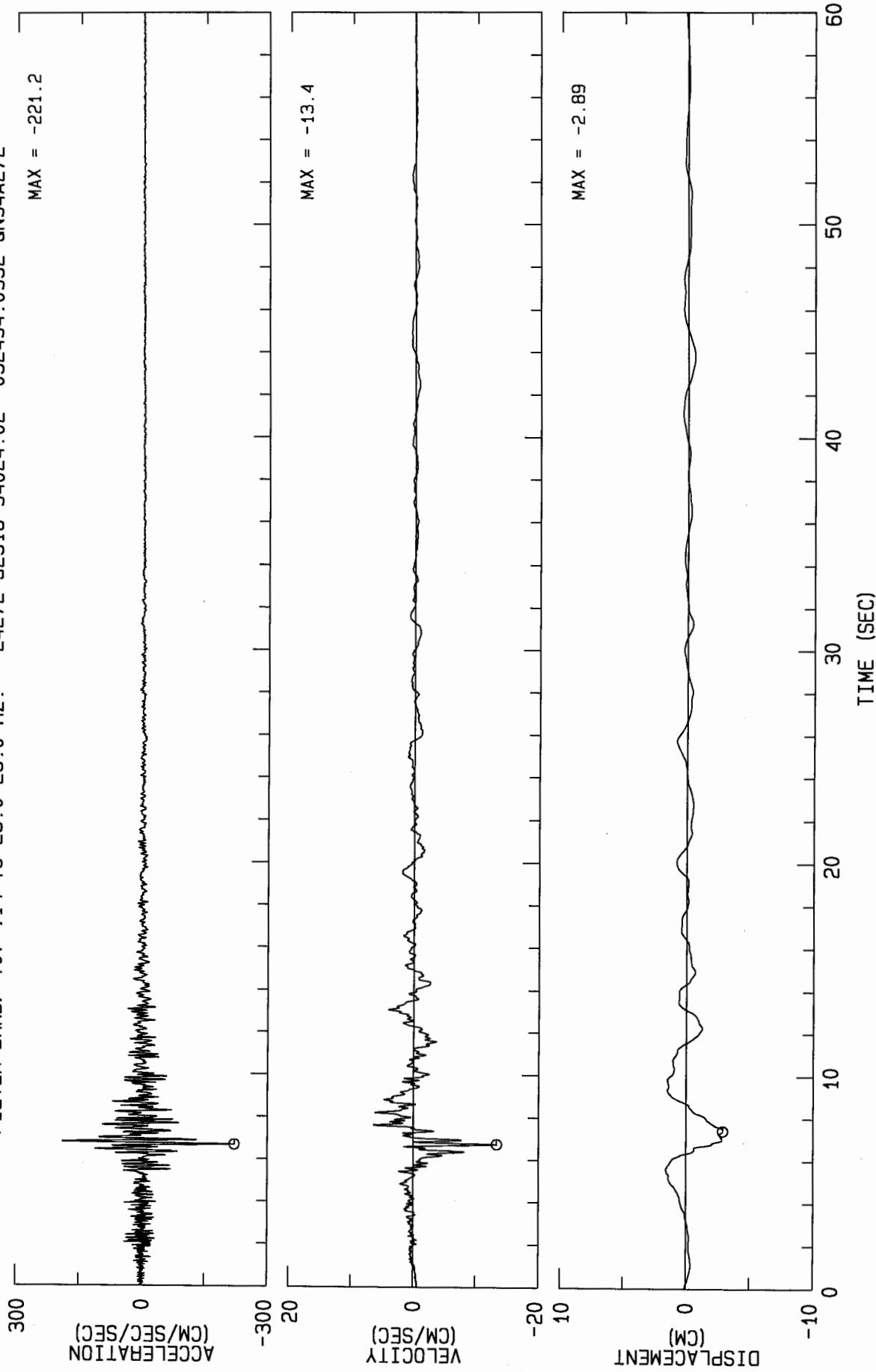
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
ALHAMBRA - FREMONT SCHOOL
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .12-.24 TO 23.0-25.0 HZ.
24461-S3498-94019.02 042594.1027-QN94A461



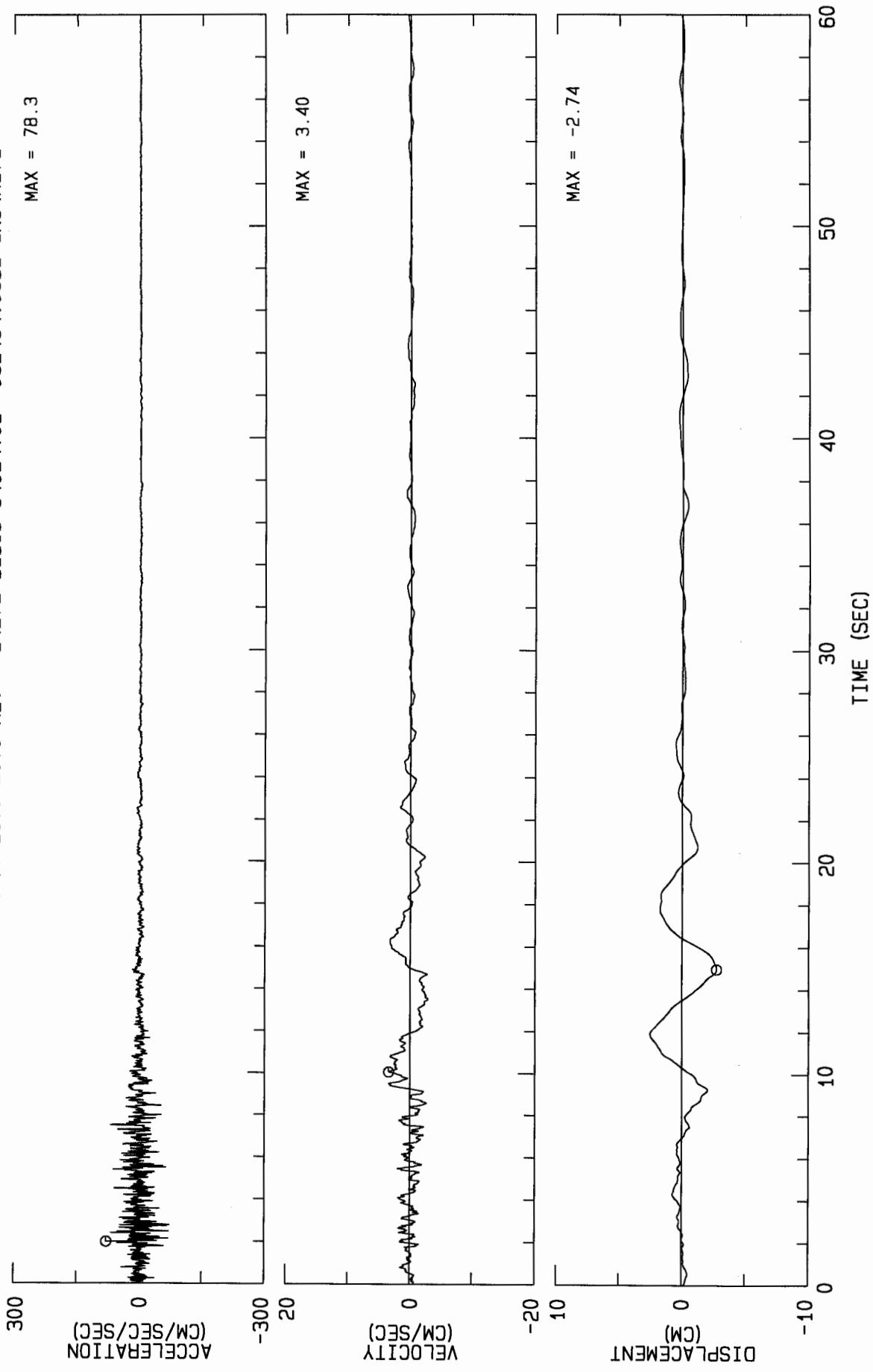




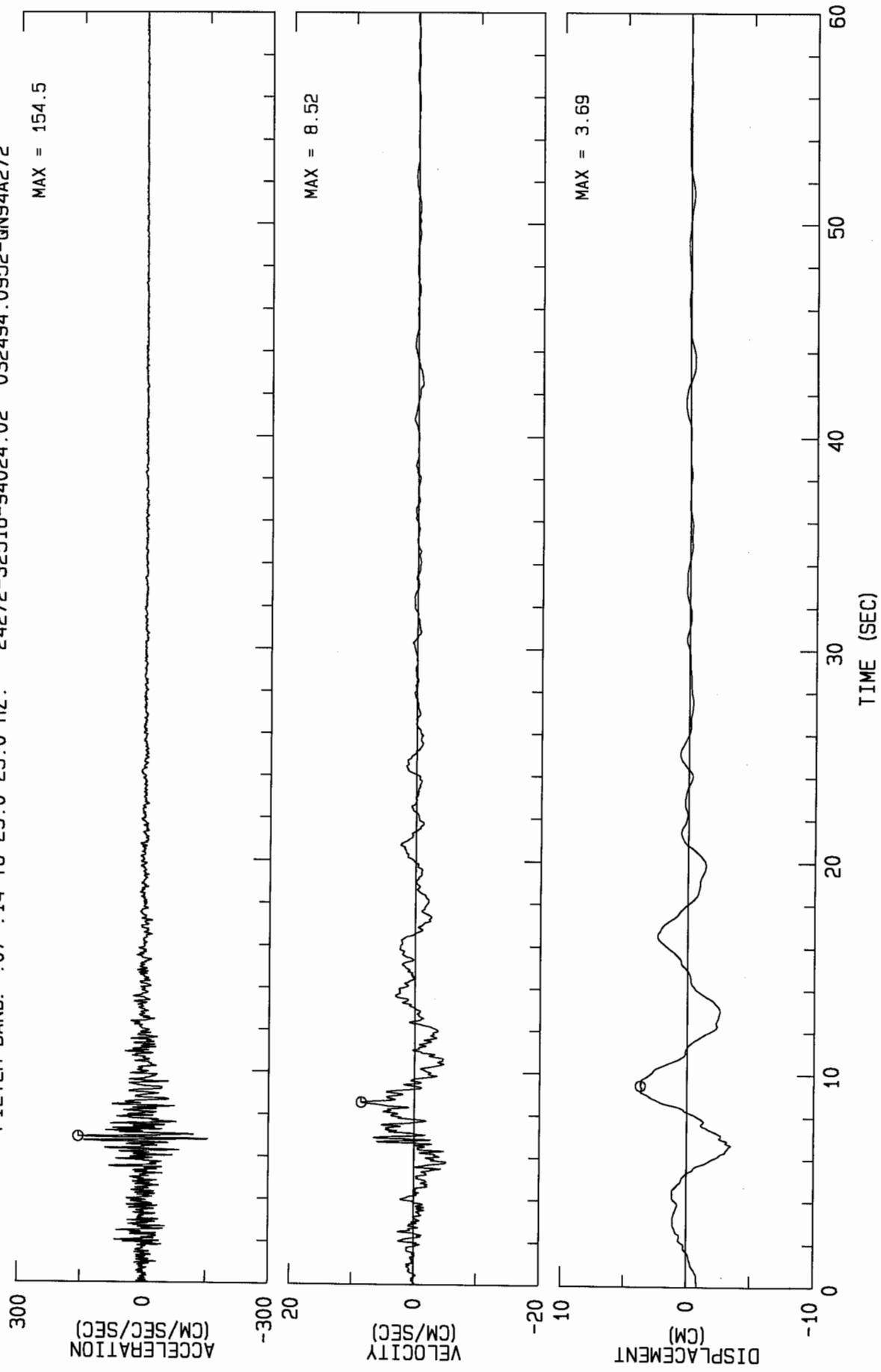
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LAKE HUGHES #9 CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .07-.14 TO 23.0-25.0 Hz. 24272-S2516-94024.02 032494.0952-GN94A272



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LAKE HUGHES #9 CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .07-.14 TO 23.0-25.0 HZ. 24272-S2516-94024.02 032494.0952-QN94A272

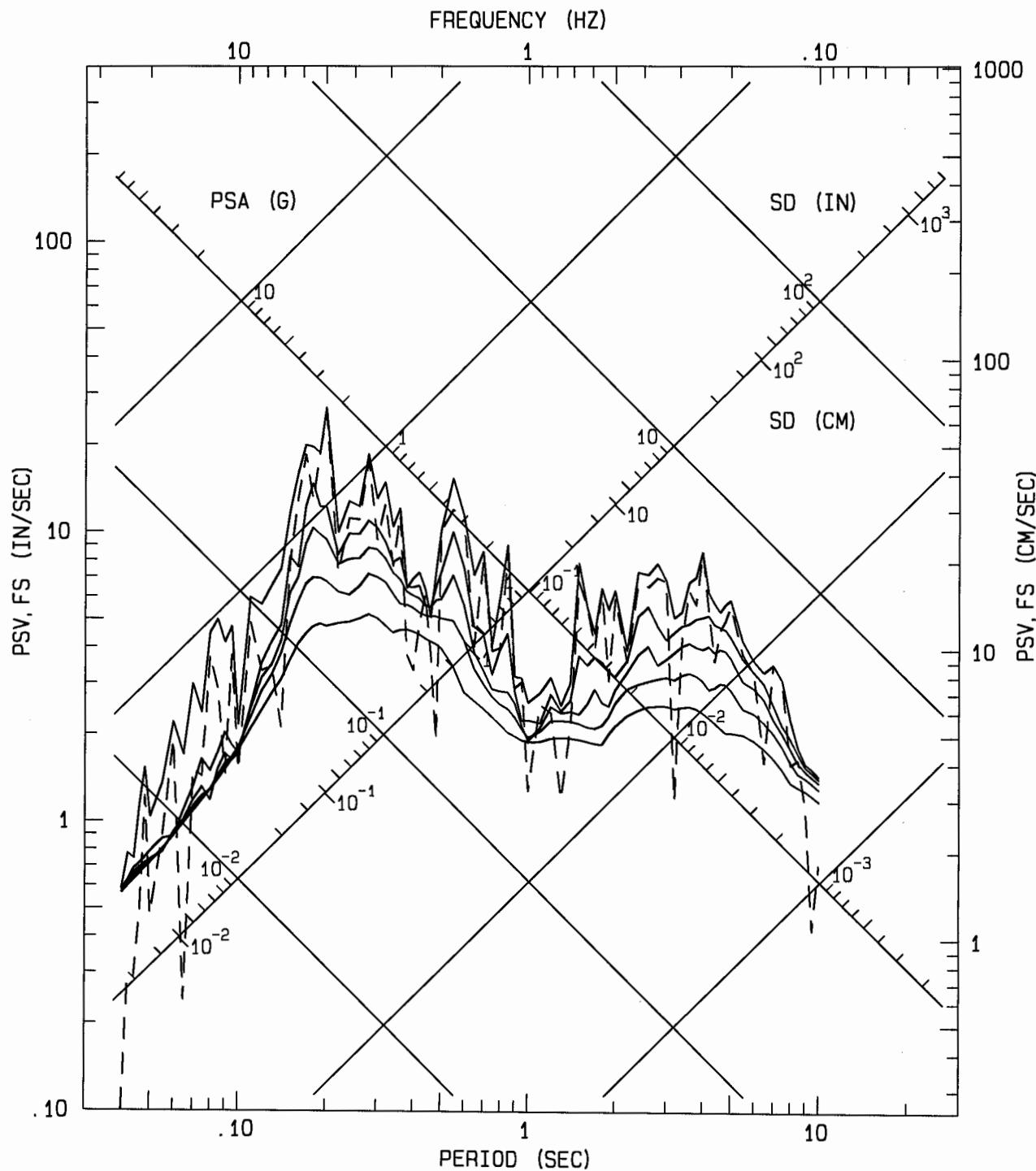


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LAKE HUGHES #9 CHN 3: 360 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .07-.14 TO 23.0-25.0 Hz. 24272-S2516-94024.02 032494.0952-QN94A272



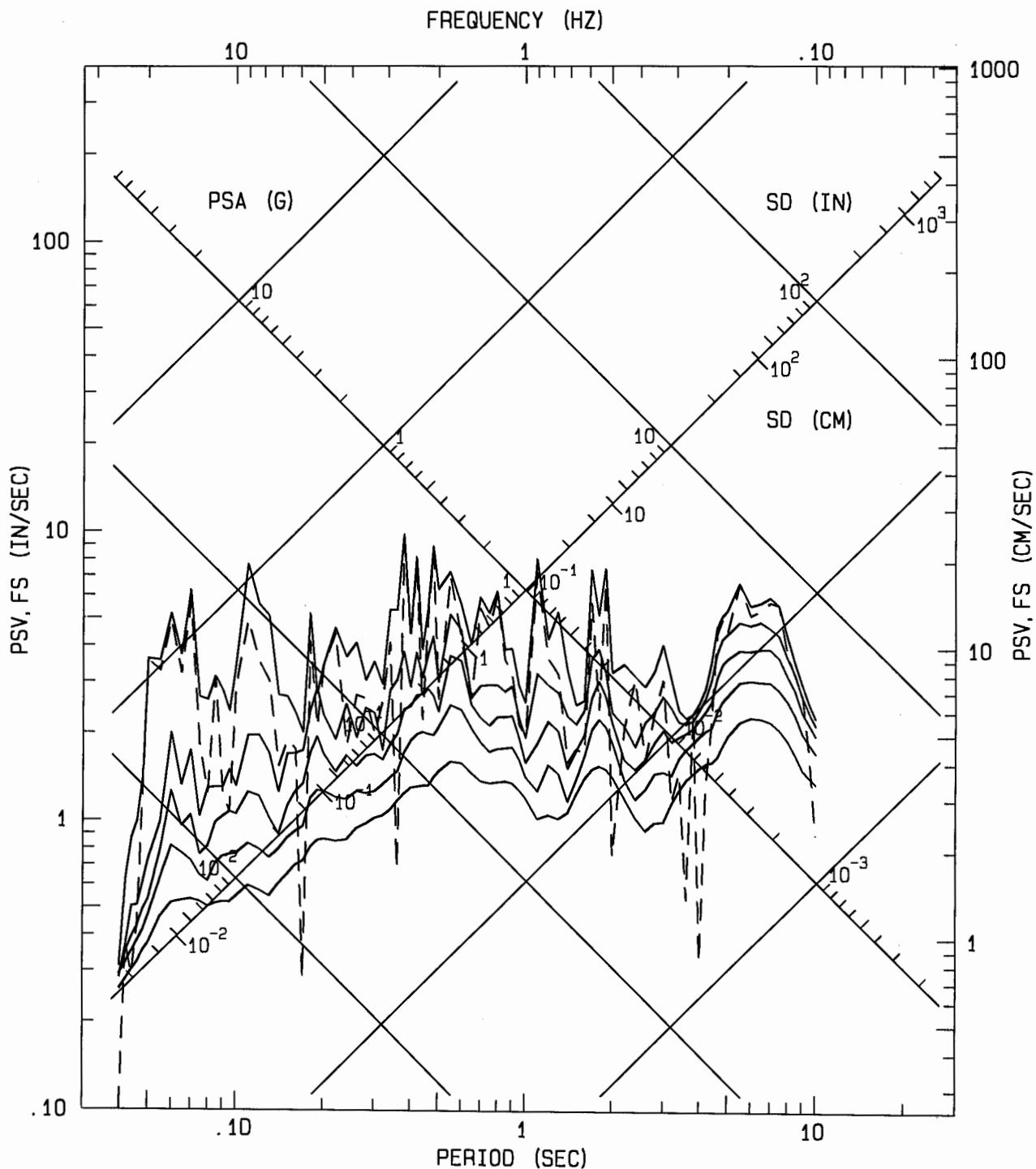
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 LAKE HUGHES #9
 CHN 1: 90 DEG
 ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .07-.14 TO 23.0-25.0 Hz.
 24272-S2516-94024.02 042594.1023-QN94A272

— RESPONSE SPECTRA: PSV, PSA & SD — — FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



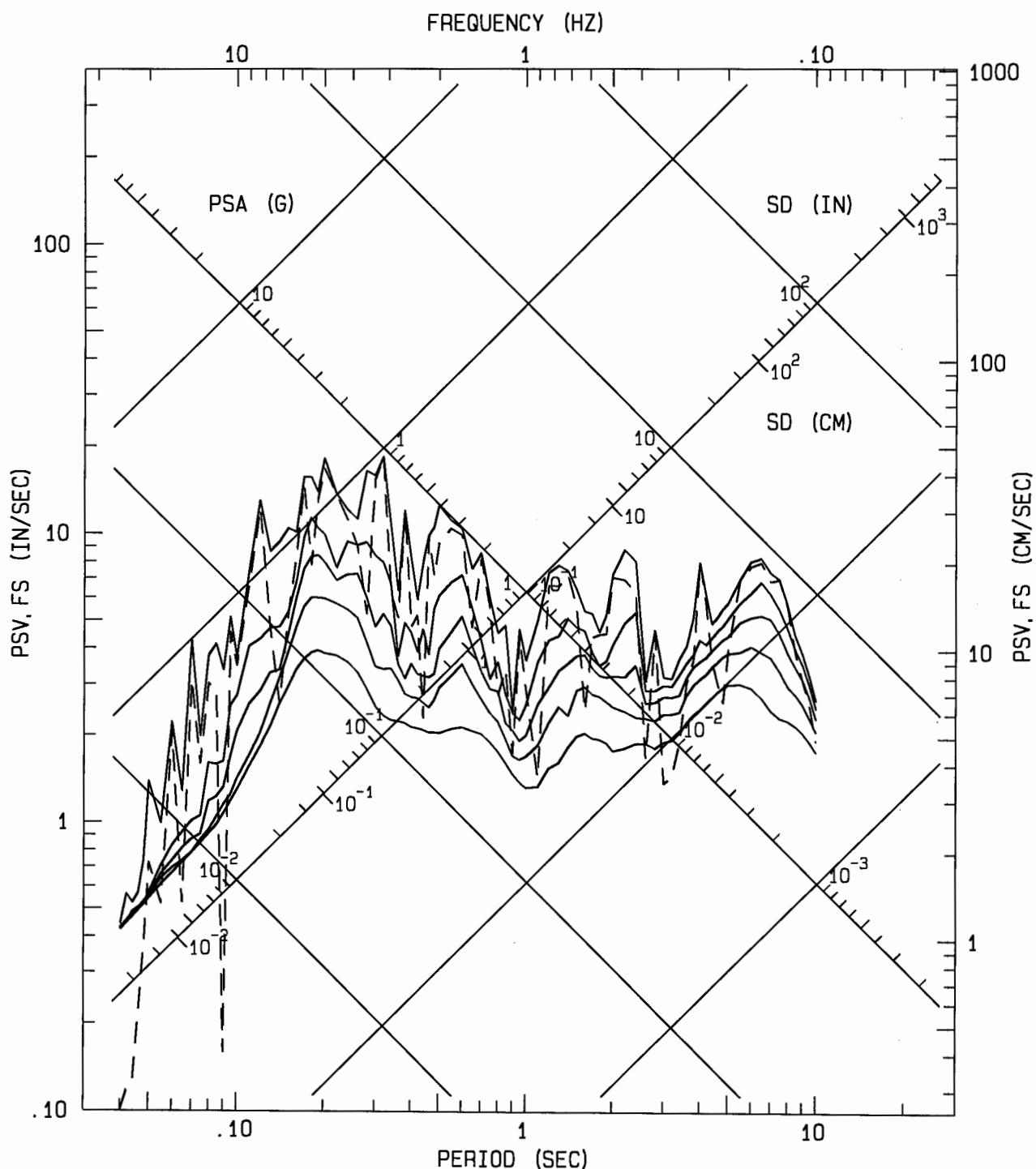
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 LAKE HUGHES #9
 CHN 2: UP
 ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .07-.14 TO 23.0-25.0 Hz.
 24272-S2516-94024.02 042594.1023-QN94A272

— RESPONSE SPECTRA: PSV, PSA & SD —— FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%

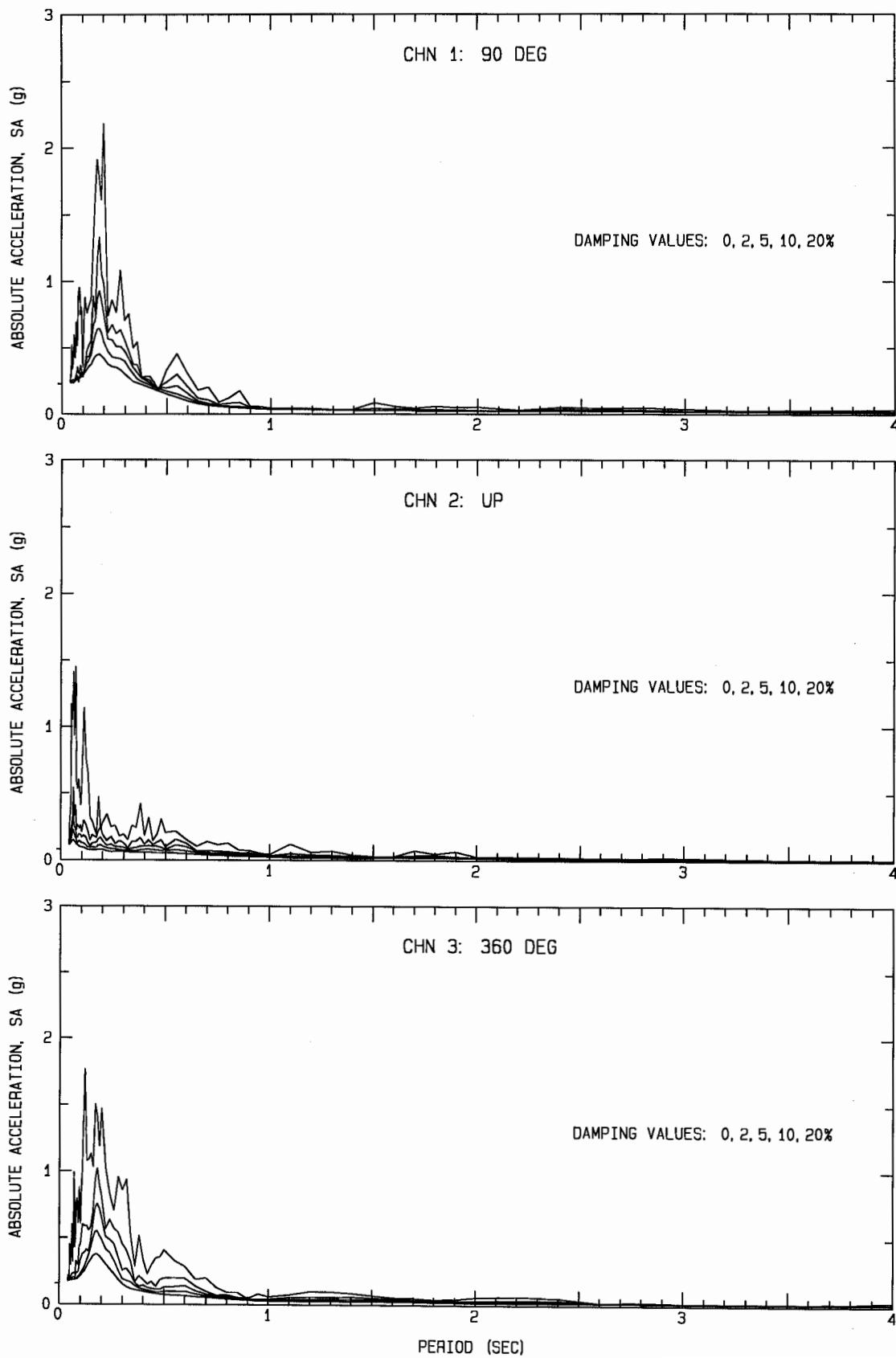


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 LAKE HUGHES #9
 CHN 3: 360 DEG
 ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .07-.14 TO 23.0-25.0 Hz.
 24272-S2516-94024.02 042594.1023-QN94A272

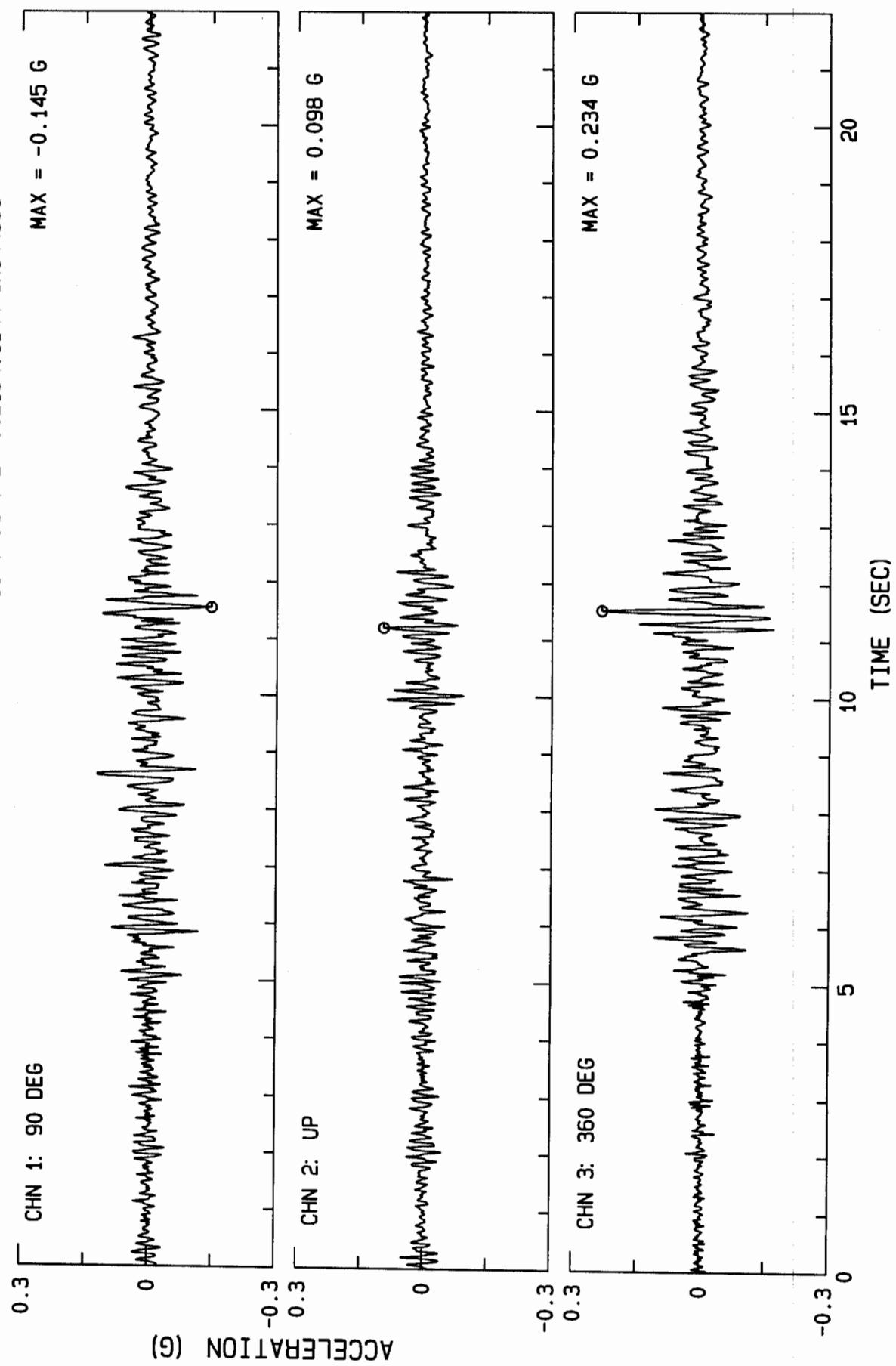
— RESPONSE SPECTRA: PSV, PSA & SD — — FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



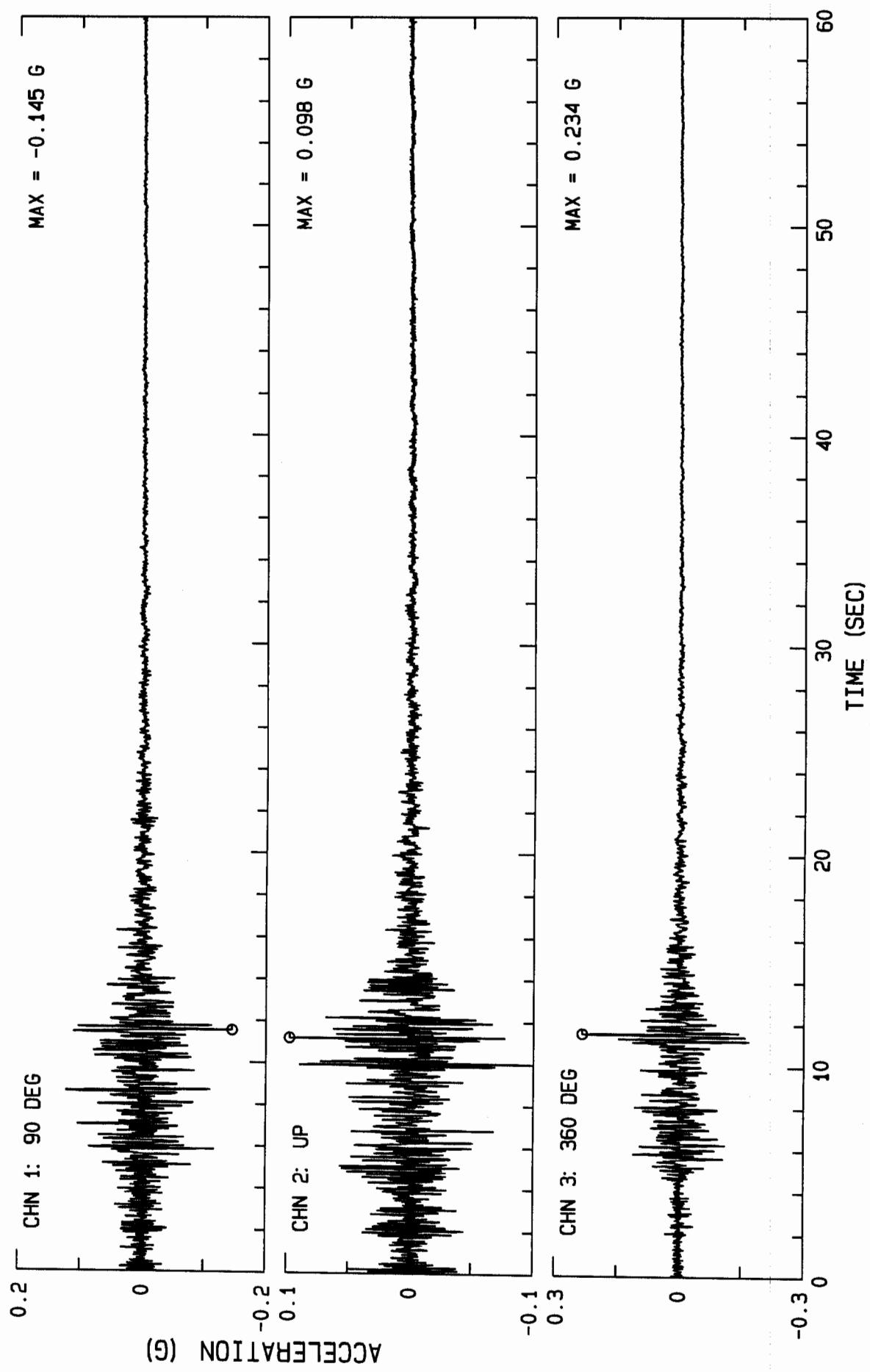
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LAKE HUGHES #9
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .07-.14 TO 23.0-25.0 Hz.
24272-S2516-94024.02 042594.1023-QN94A272



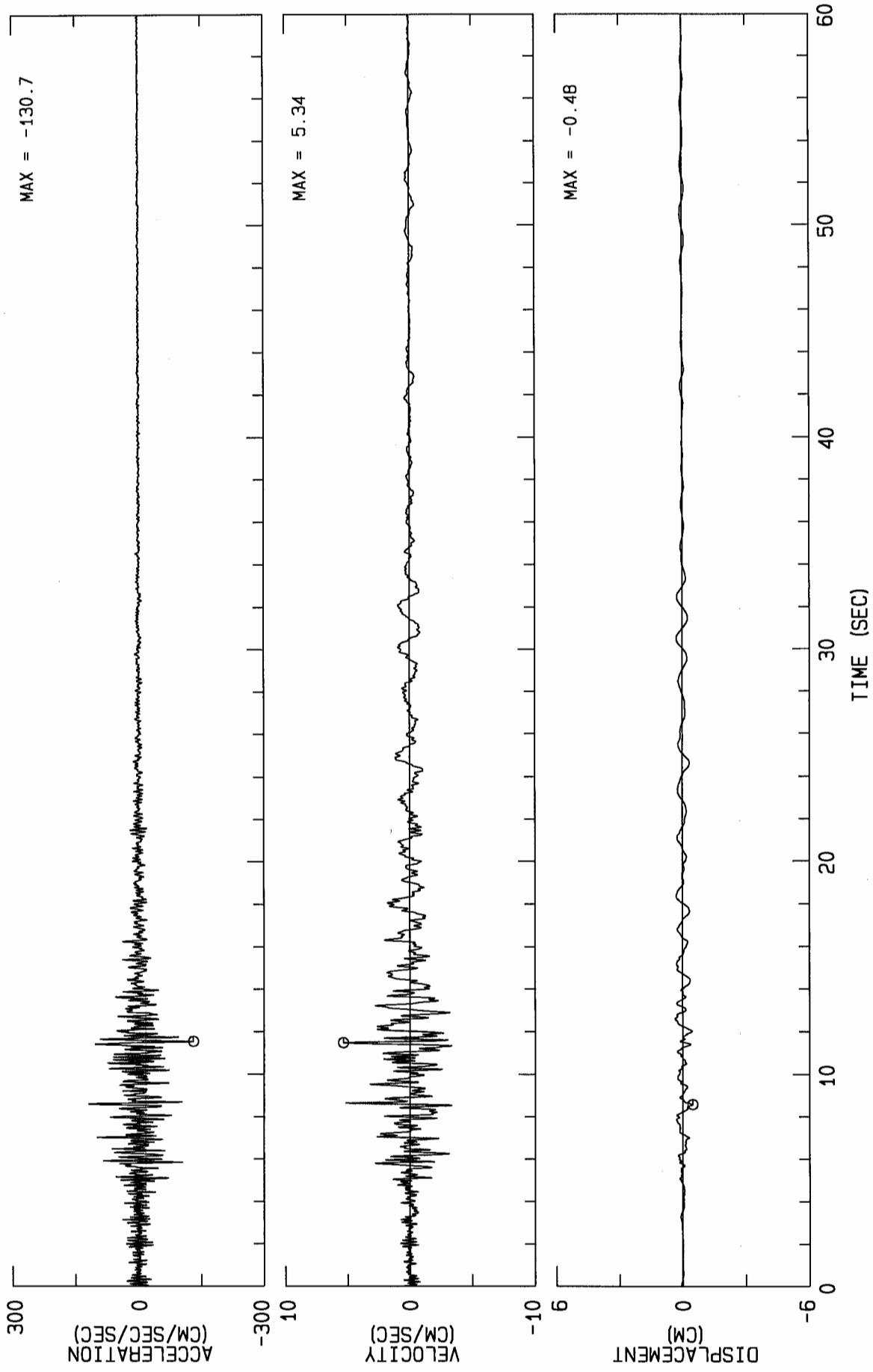
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
MT. WILSON - CALTECH SEISMIC STATION
UNCORRECTED ACCELEROMGRAM 24399-S0416-94020.02 032194.1544-QN94A399



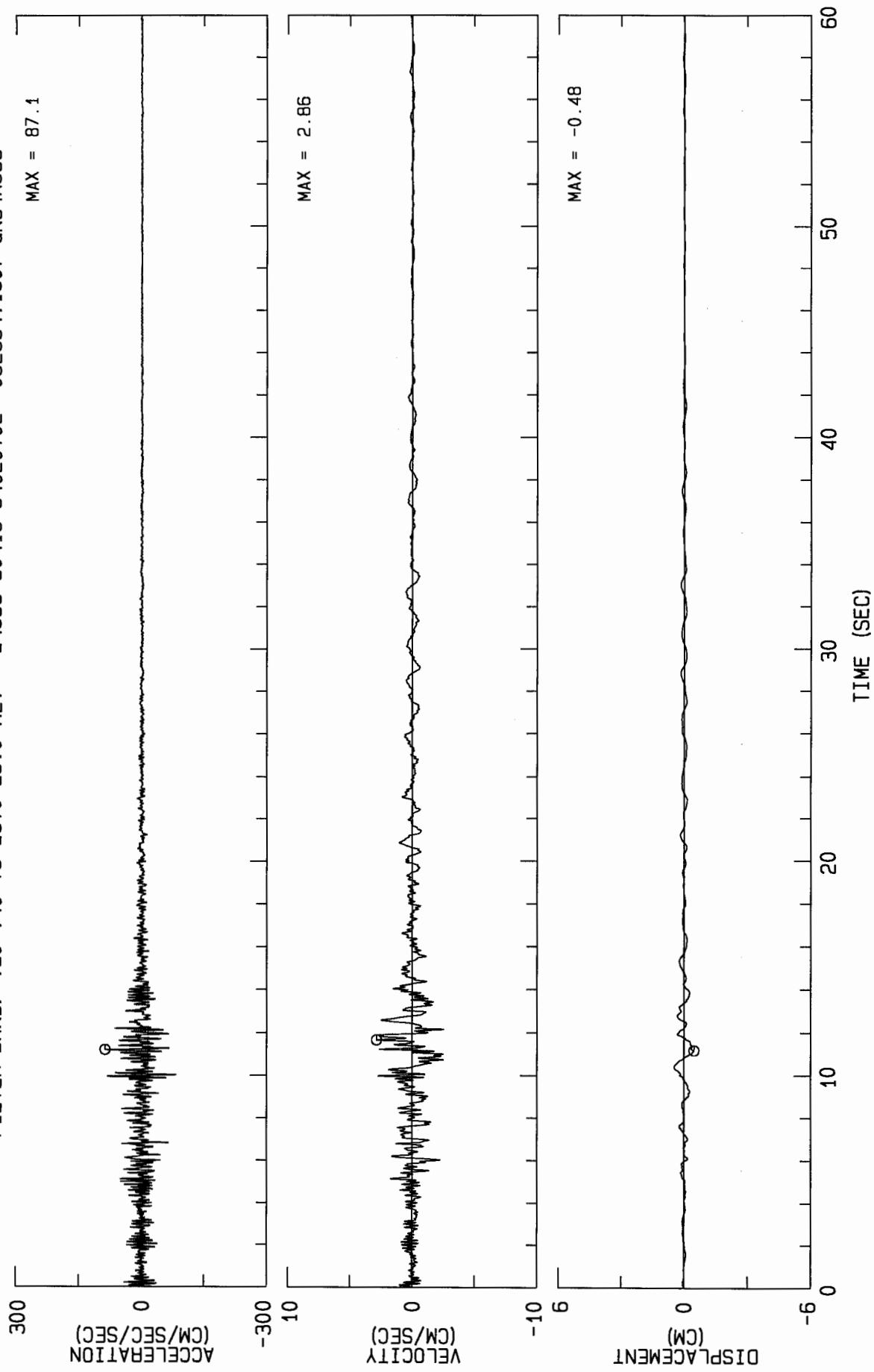
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
MT. WILSON - CALTECH SEISMIC STATION
UNCORRECTED ACCELERGRAM 24399-S0416-94020.02 032194.1544-QN94A399



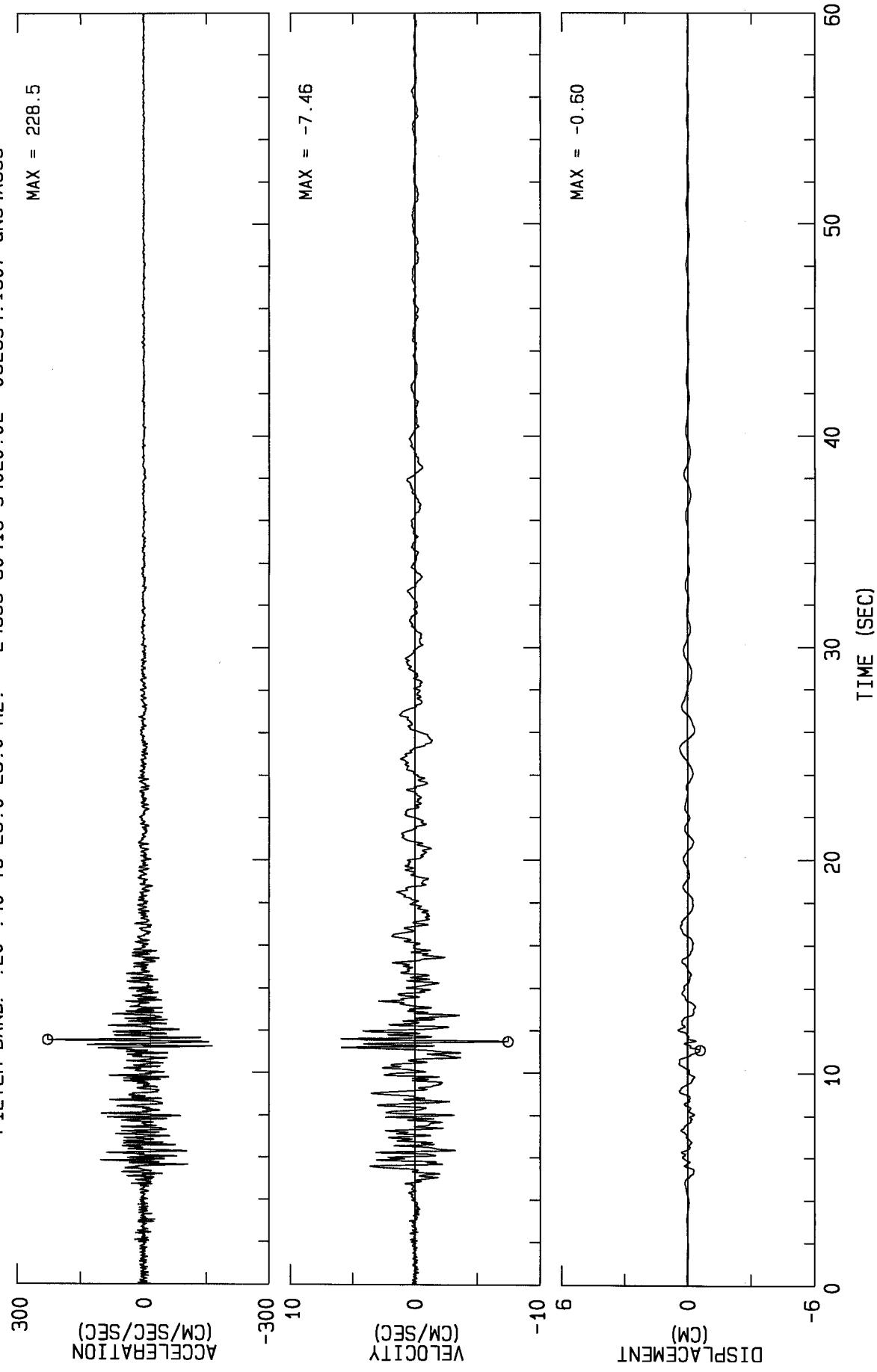
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
MT. WILSON - CAL TECH SEISMIC STATION CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 Hz. 24399-S0416-94020.02 032394.1307-QN94A399



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
MT. WILSON - CALTECH SEISMIC STATION CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20-.40 TO 23.0-25.0 HZ. 24399-S0416-94020.02 032394.1307-QN94A399

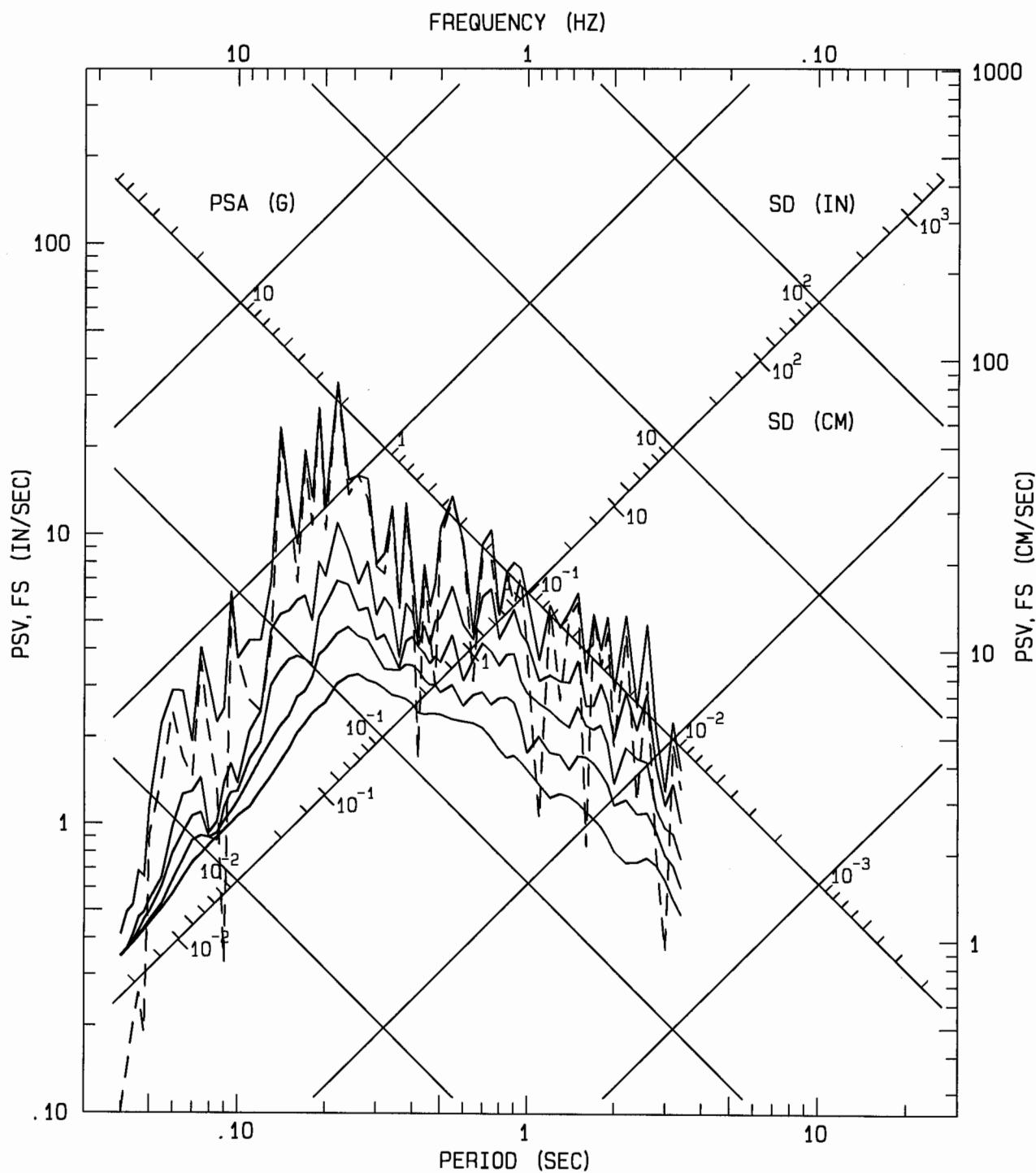


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
MT. WILSON - CALTECH SEISMIC STATION CHN 3: 360 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .20 - .40 TO 23.0-25.0 Hz. 24399-S0416-94020.02 032394.1307-QN94A399



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 MT. WILSON - CALTECH SEISMIC STATION
 CHN 1: 90 DEG
 ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 Hz.
 24399-S0416-94020.02 042594.1016-QN94A399

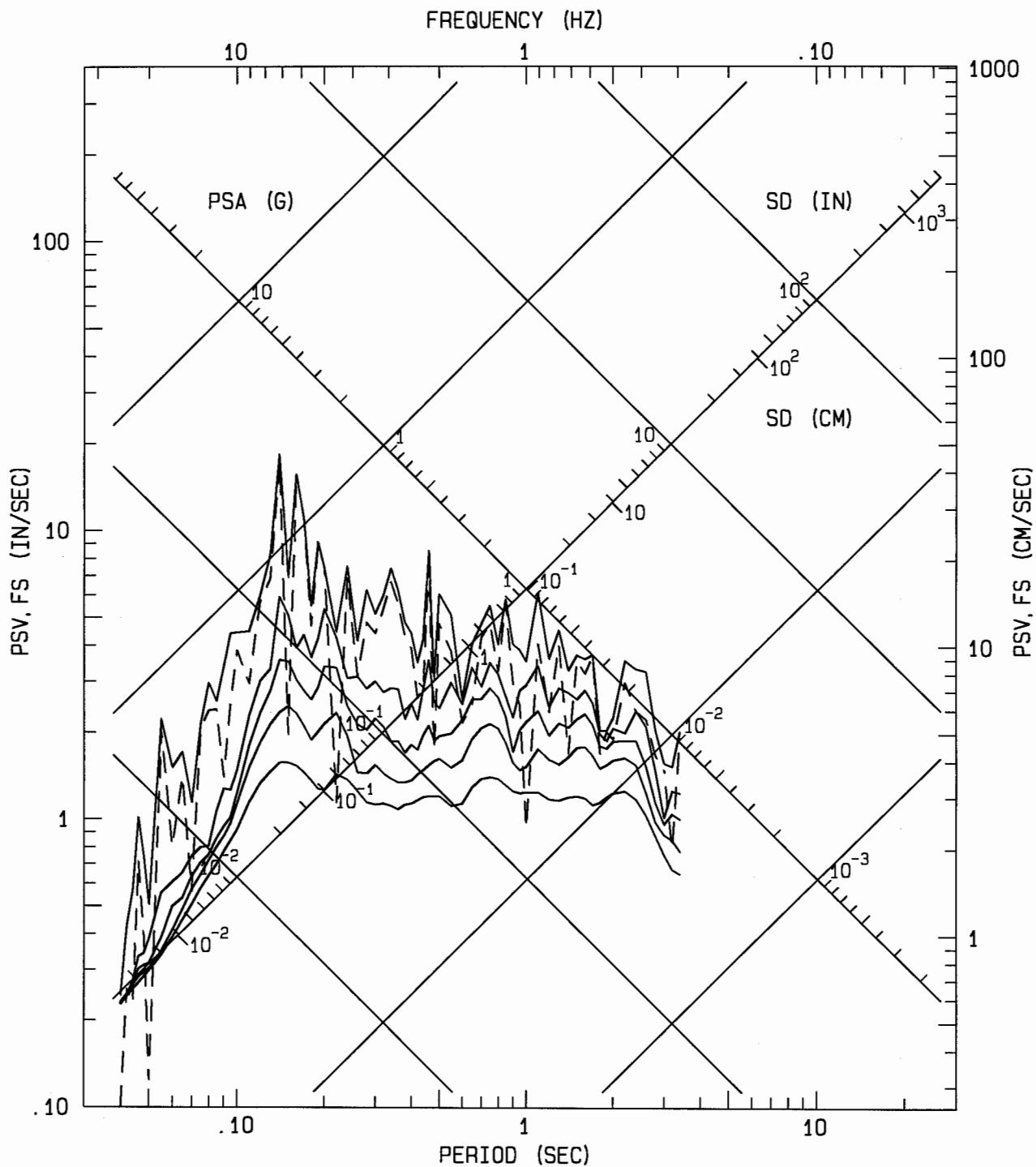
— RESPONSE SPECTRA: PSV, PSA & SD — — FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 MT. WILSON - CALTECH SEISMIC STATION
 CHN 2: UP

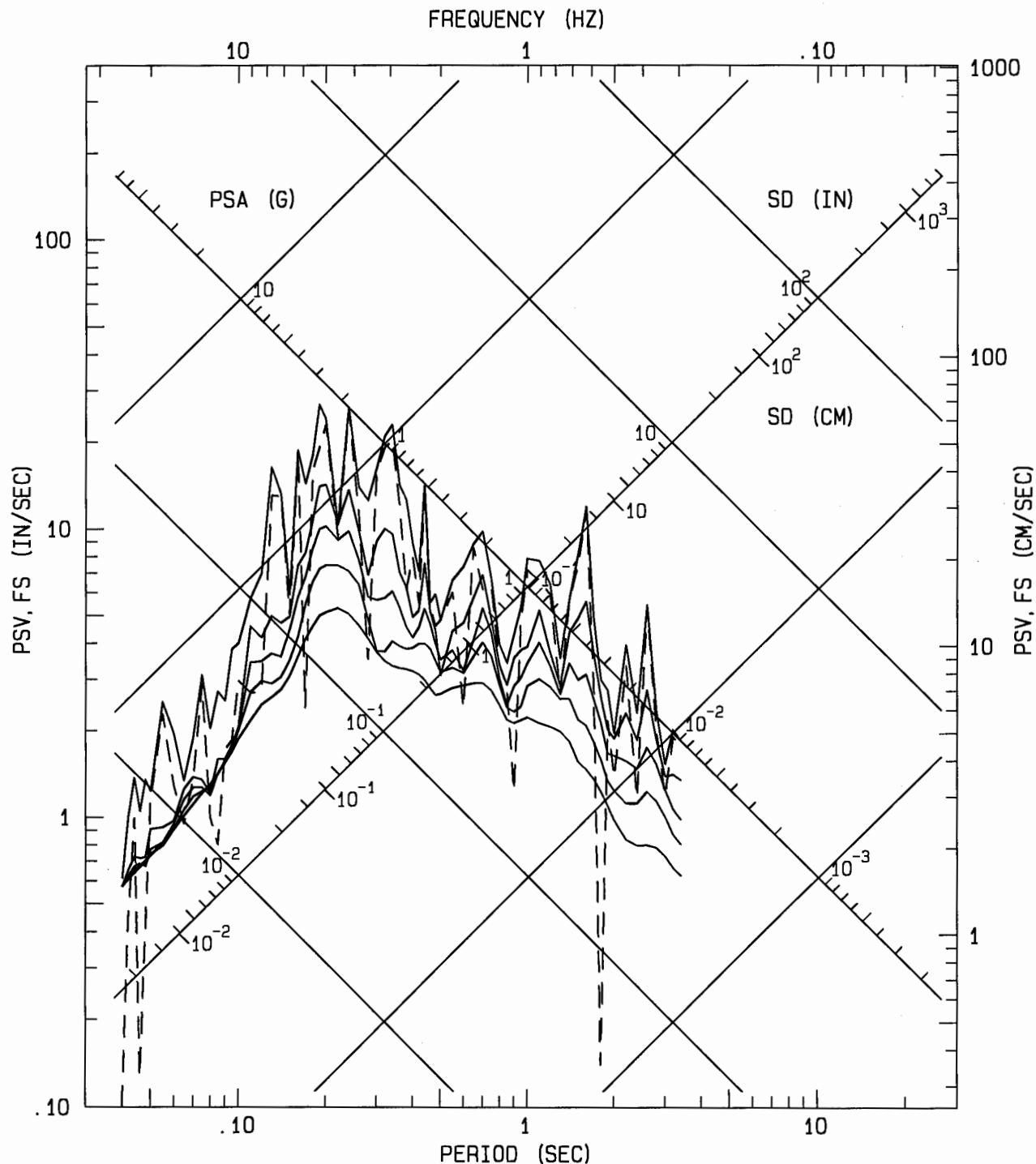
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 Hz.
 24399-S0416-94020.02 042594.1016-QN94A399

— RESPONSE SPECTRA: PSV, PSA & SD — — FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%

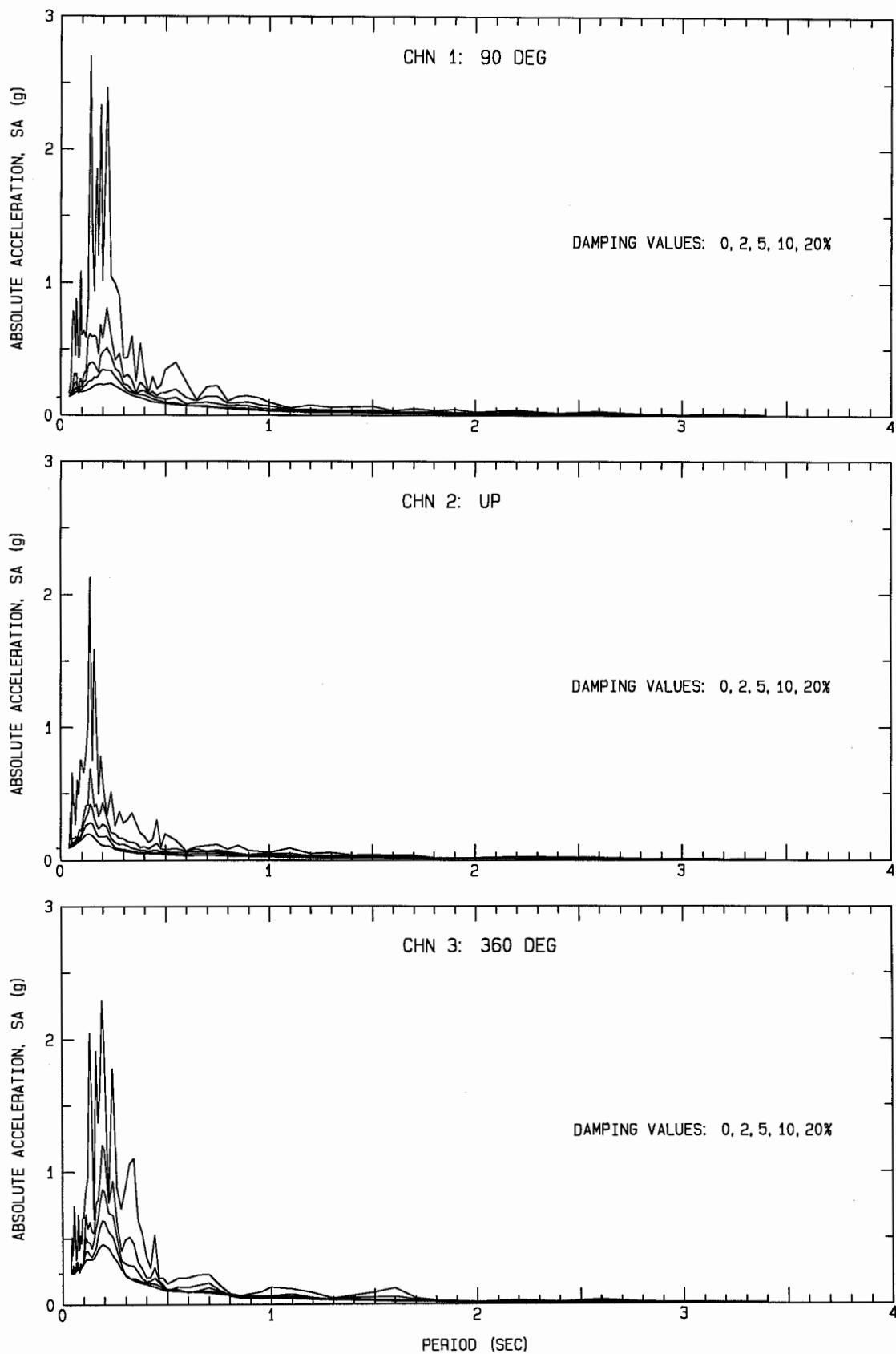


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 MT. WILSON - CALTECH SEISMIC STATION
 CHN 3: 360 DEG
 ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 Hz.
 24399-S0416-94020.02 042594.1016-QN94A399

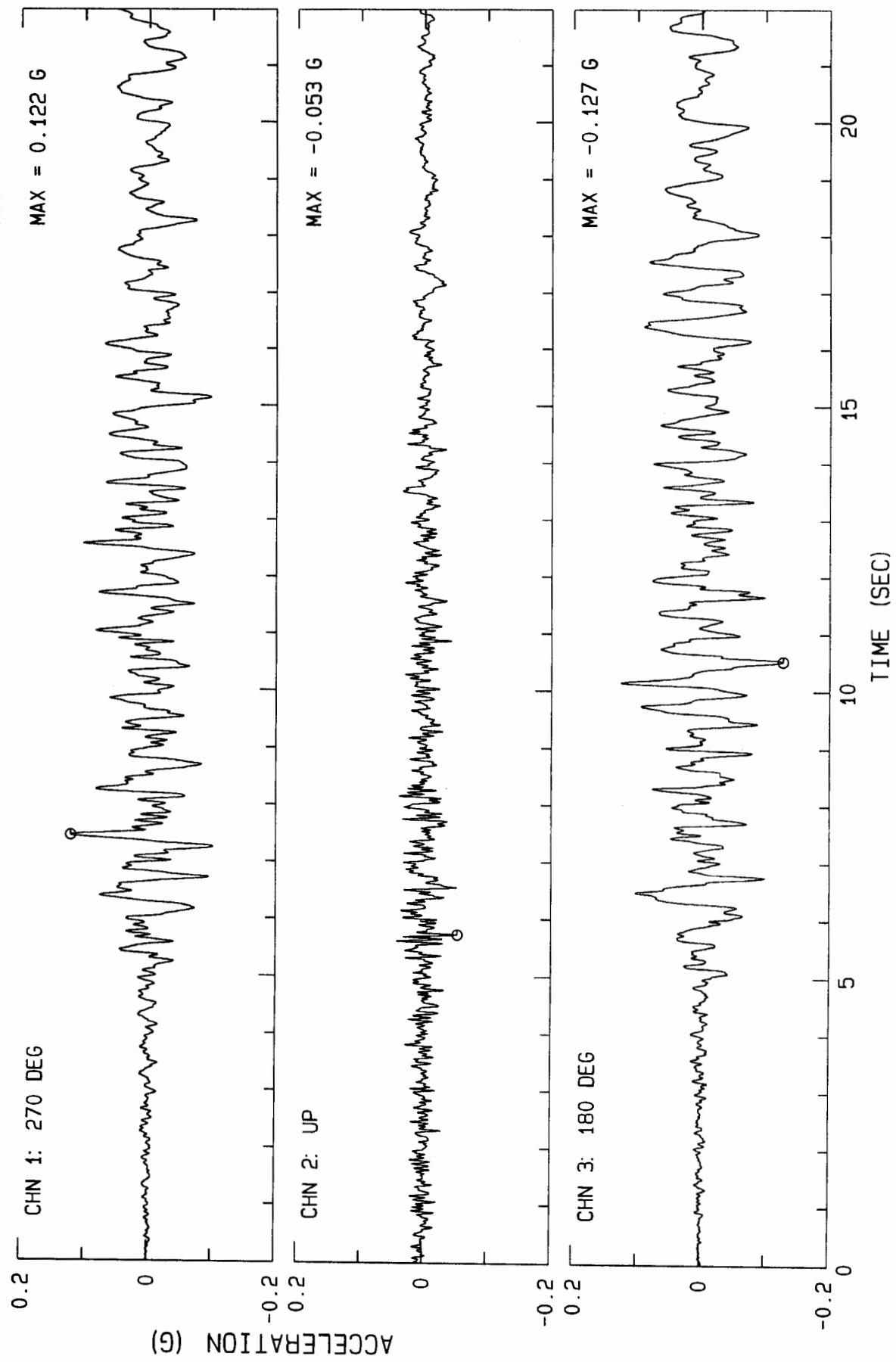
— RESPONSE SPECTRA: PSV, PSA & SD — — FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



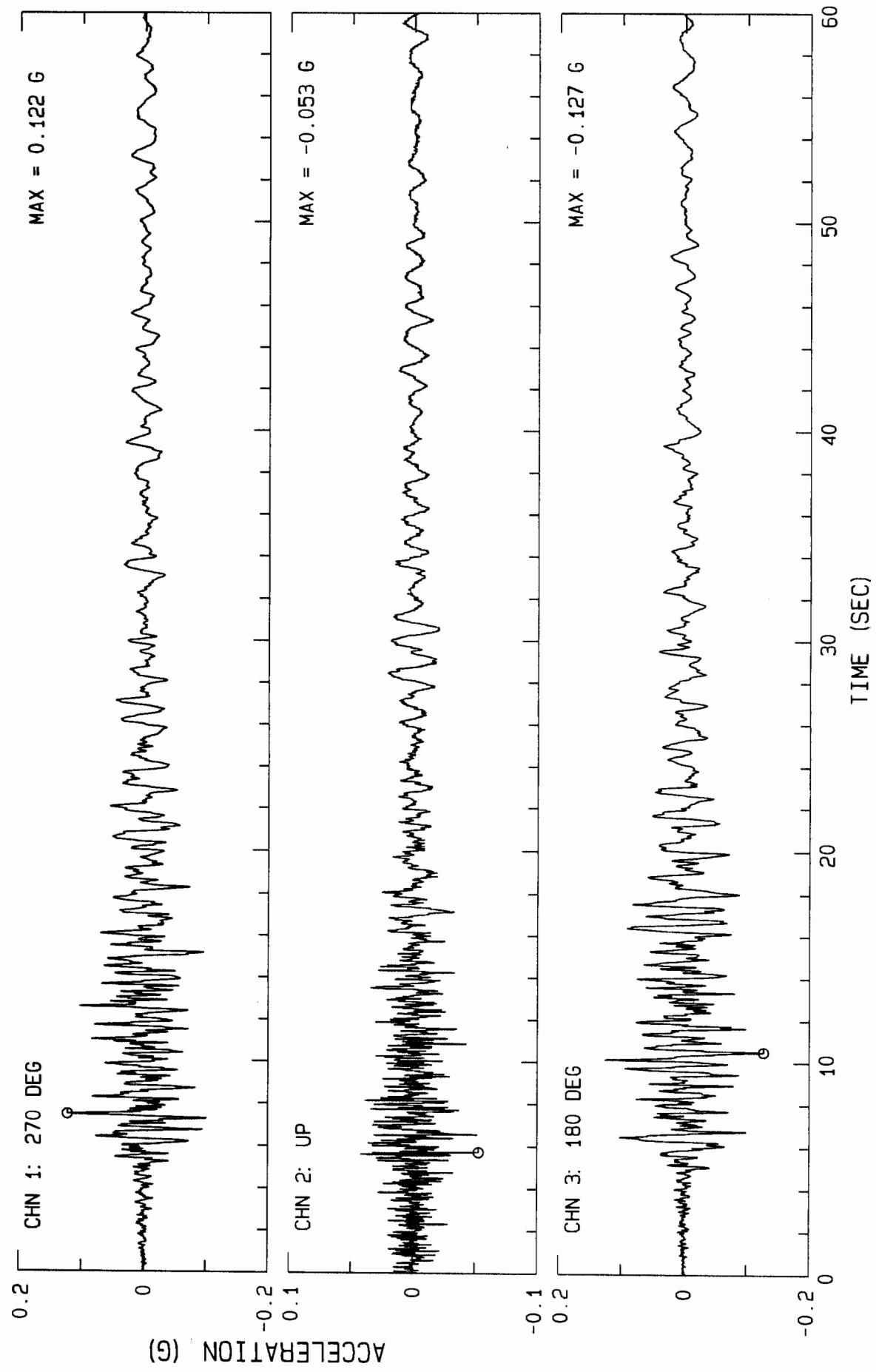
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
MT. WILSON - CALTECH SEISMIC STATION
ACCELEROMGRAM BANDPASS-FILTERED WITH RAMPS AT .20-.40 TO 23.0-25.0 HZ.
24399-S0416-94020.02 042594.1016-QN94A399



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
CAMARILLO
UNCORRECTED ACCELERGRAM 252B2-S250B-94026.02 042594.QN94A2B2



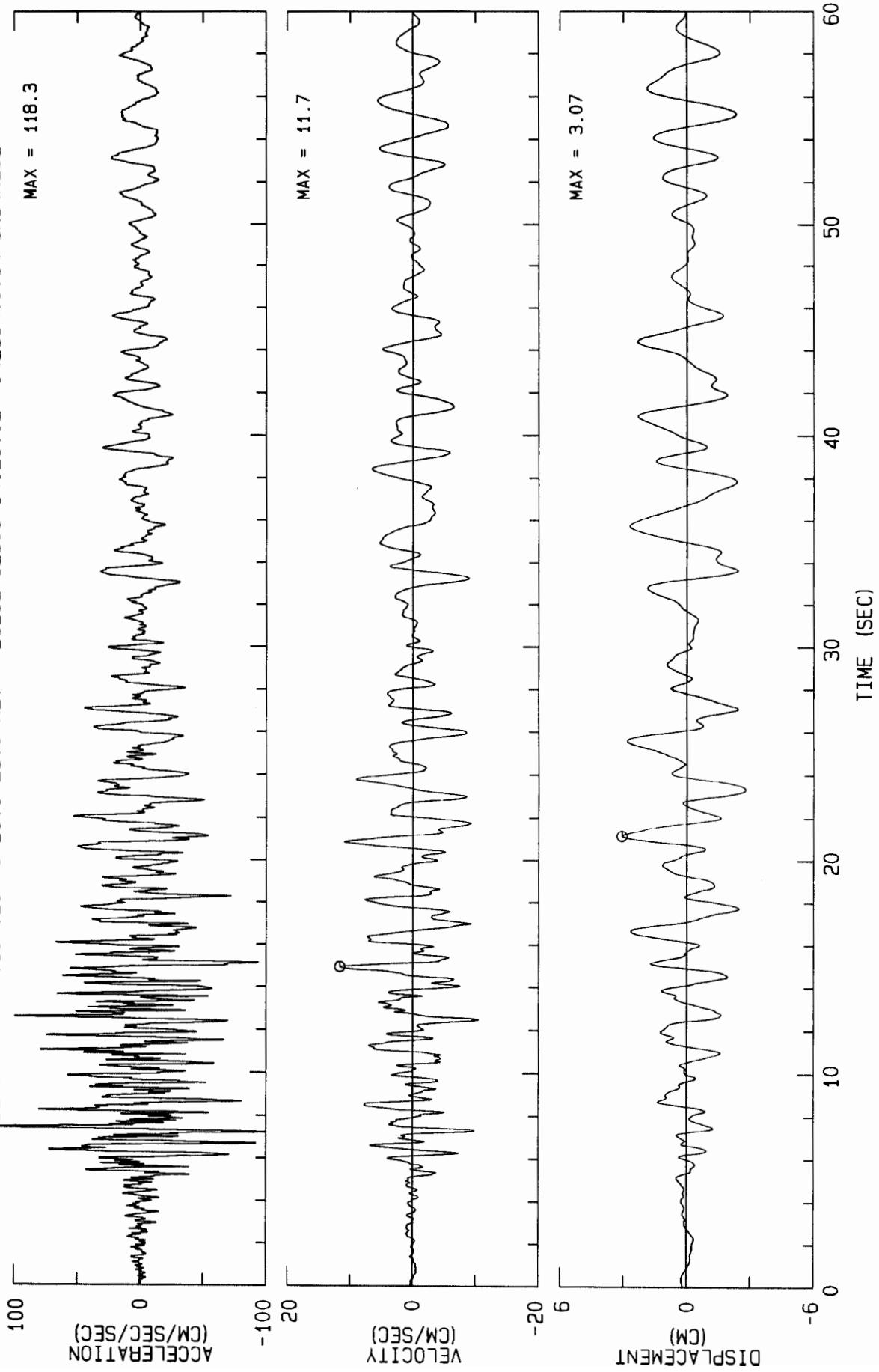
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
CAMARILLO
UNCORRECTED ACCELEROMETER 25282-S2508-94026.02 042594.0851-0N944A282



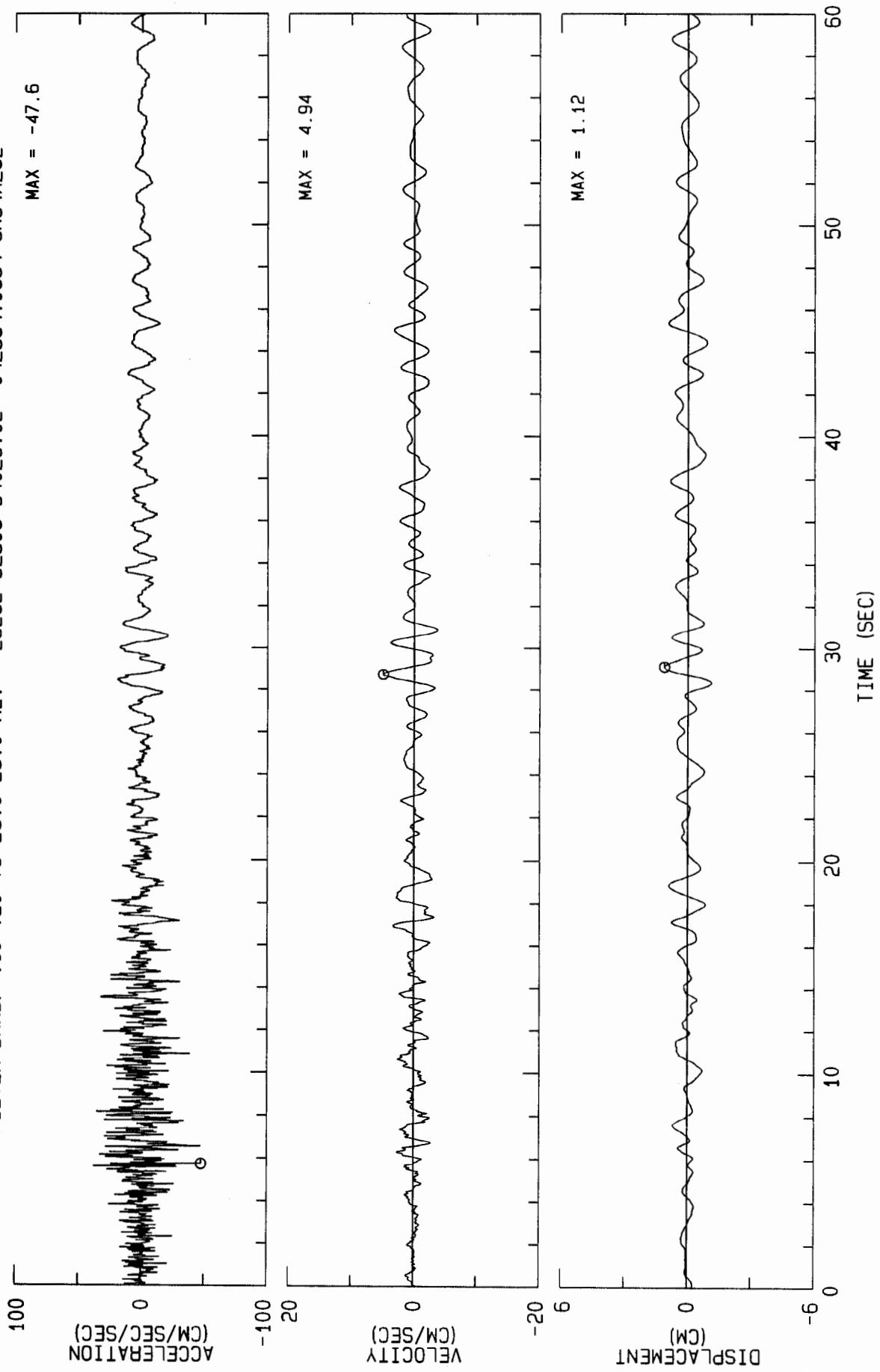
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST

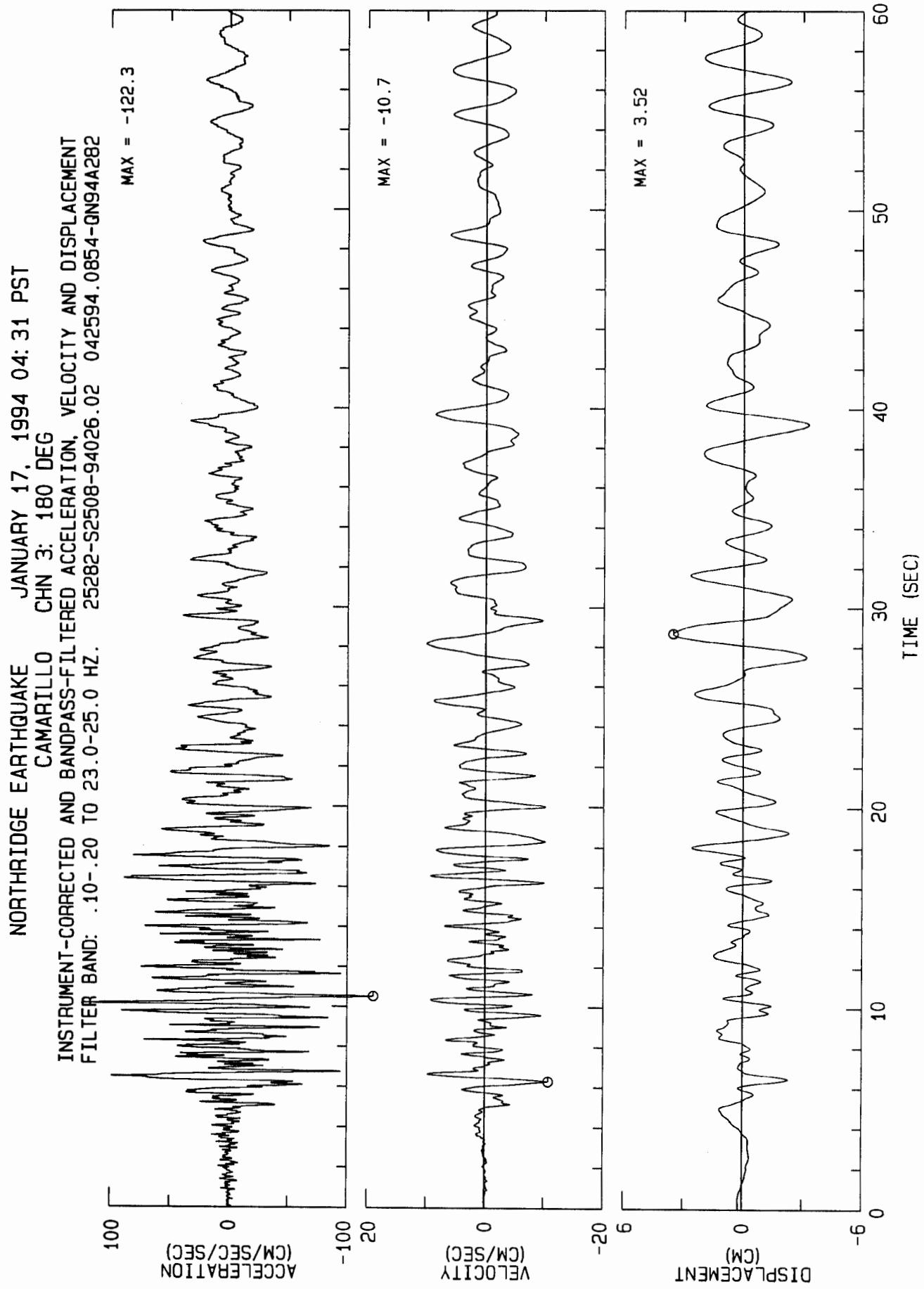
CAMARILLO CHN 1: 270 DEG

INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .10-.20 TO 23.0-25.0 HZ. 25282-S2508-94026.02 042594.0854-QN94A282

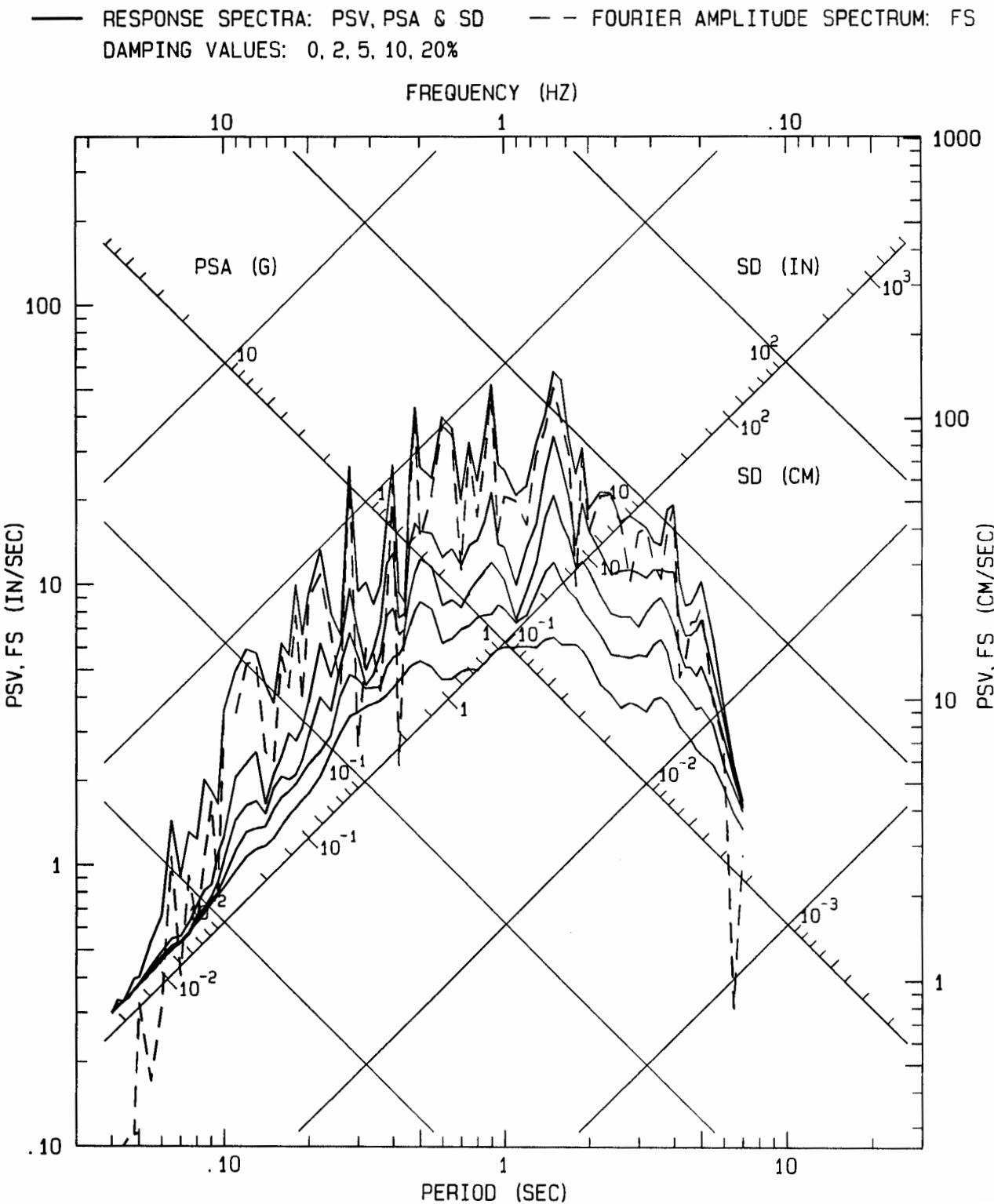


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
CAMARILLO CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .10-.20 TO 23.0-25.0 HZ. 25282-S2508-94026.02 042594.0854-QN94A282





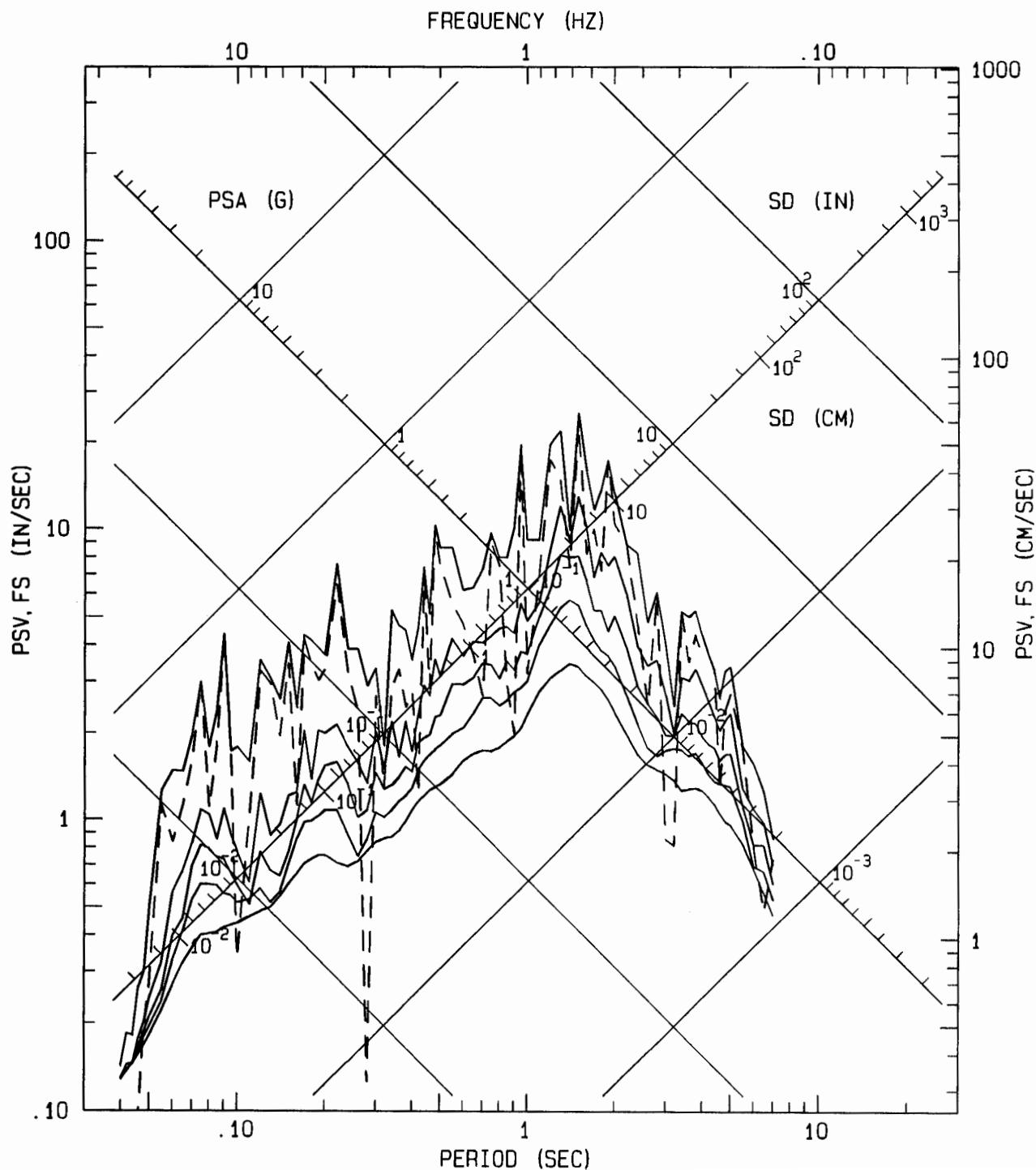
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 CAMARILLO
 CHN 1: 270 DEG
 ACCELEROMGRAM BANDPASS-FILTERED WITH RAMPS AT .10-.20 TO 23.0-25.0 HZ.
 25282-S2508-94026.02 042594.0856-QN94A282



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 CAMARILLO
 CHN 2: UP

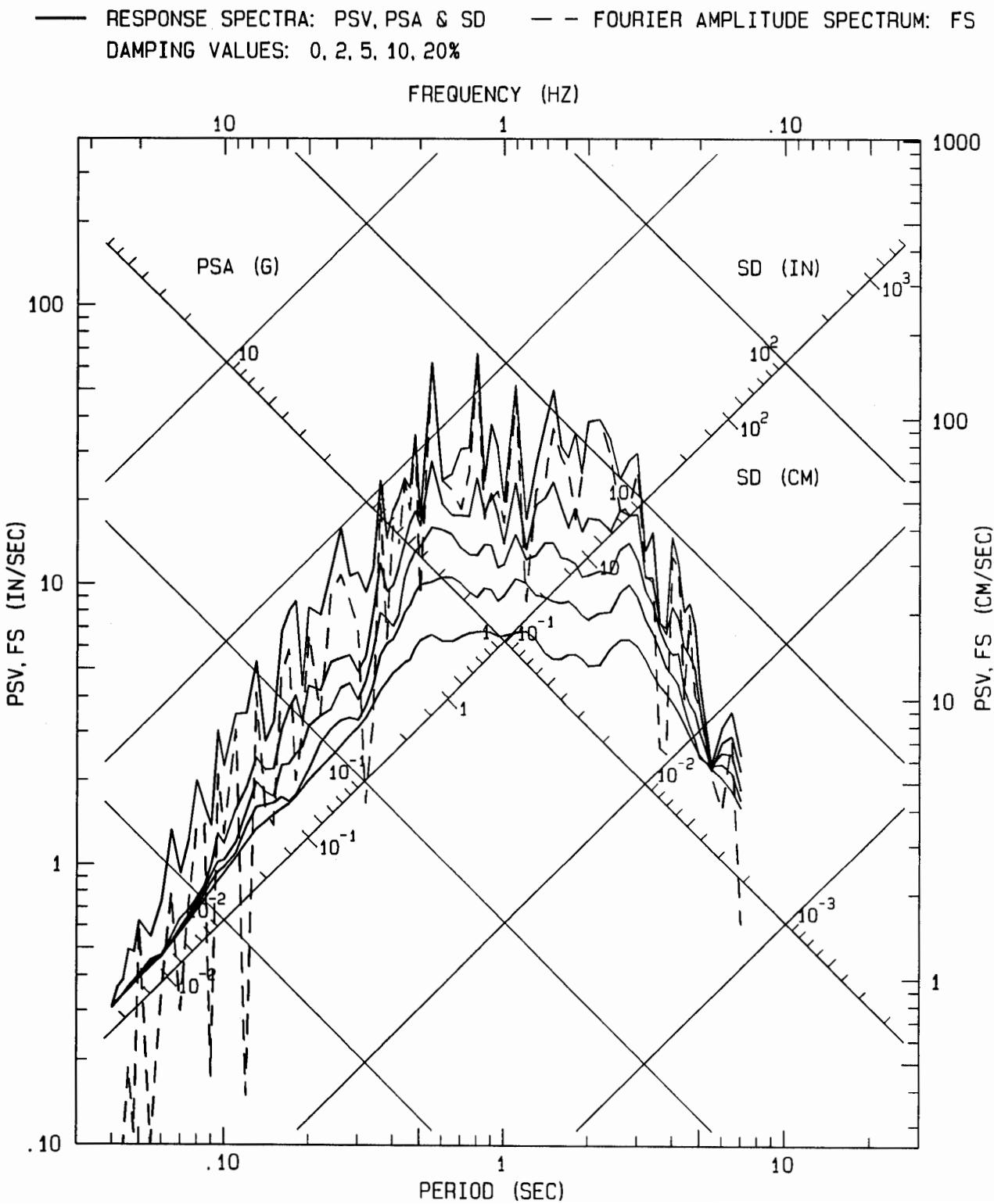
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .10-.20 TO 23.0-25.0 Hz.
 25282-S2508-94026.02 042594.0856-QN94A282

— RESPONSE SPECTRA: PSV, PSA & SD - - - FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%

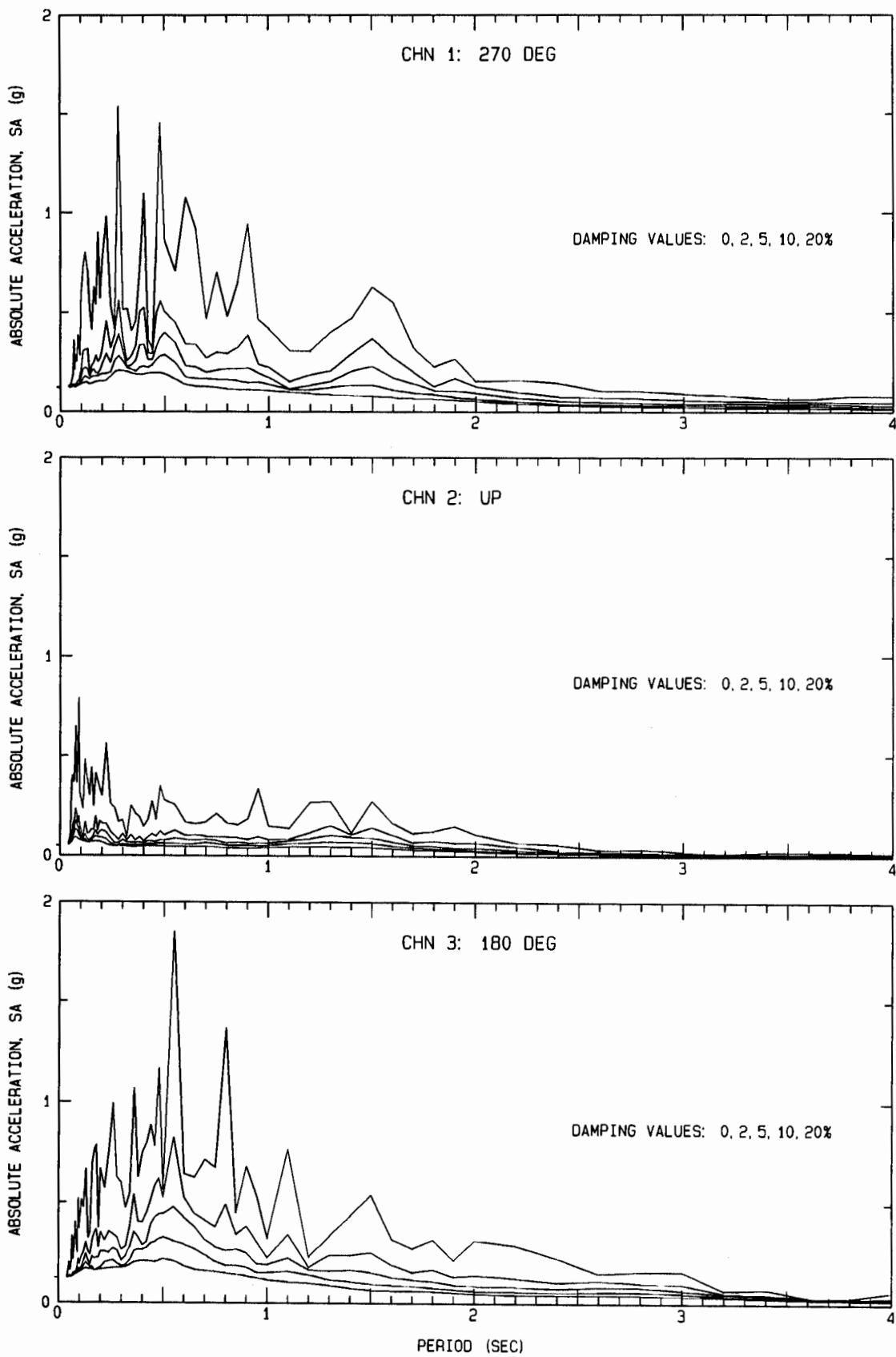


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 CAMARILLO
 CHN 3: 180 DEG

ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .10-.20 TO 23.0-25.0 Hz.
 25282-S2508-94026.02 042594.0856-QN94A282

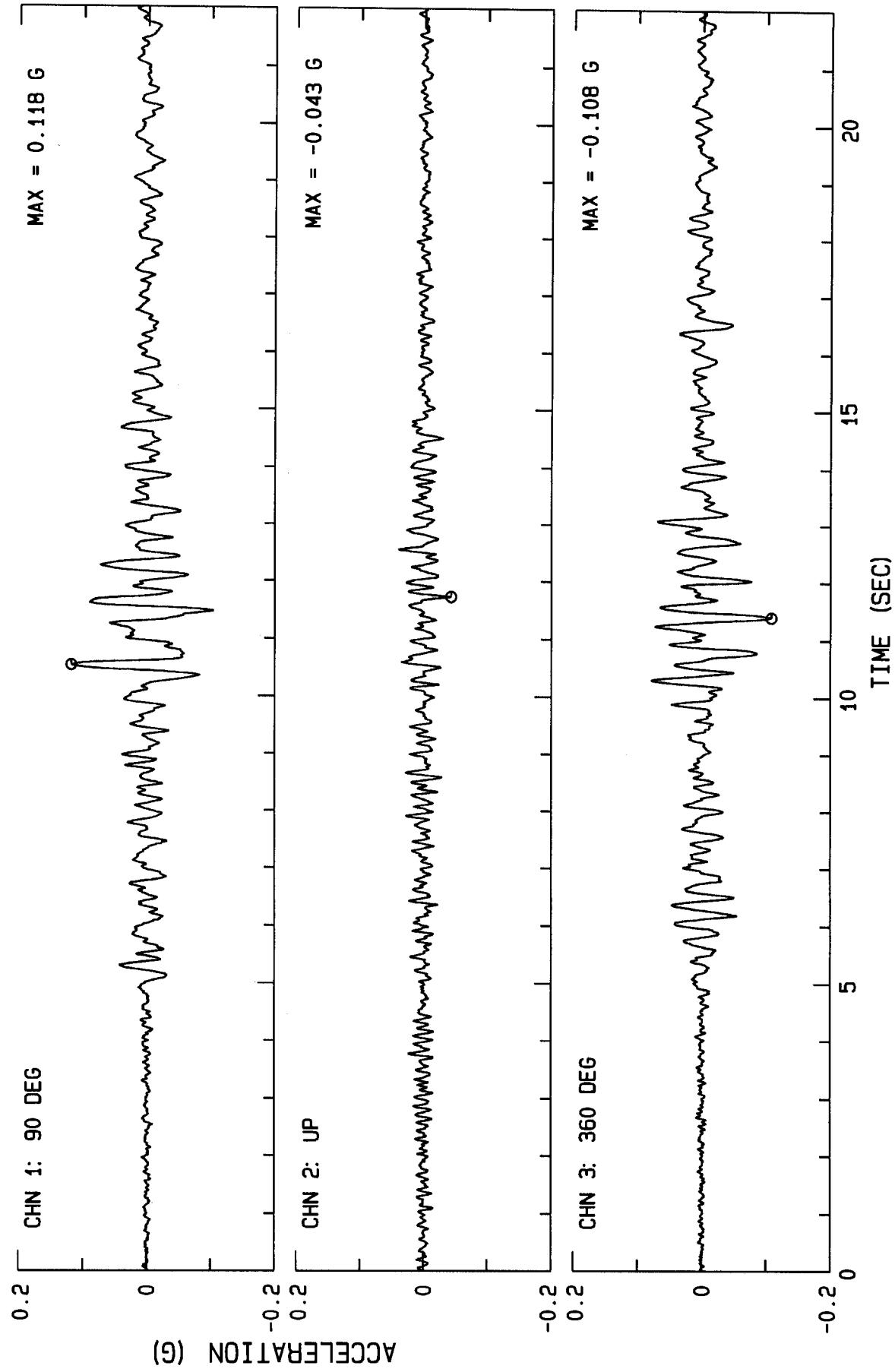


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
CAMARILLO
ACCELERGRAM BANDPASS-FILTERED WITH RAMPS AT .10-.20 TO 23.0-25.0 Hz.
25282-S2508-94026.02 042594.0856-QN94A282

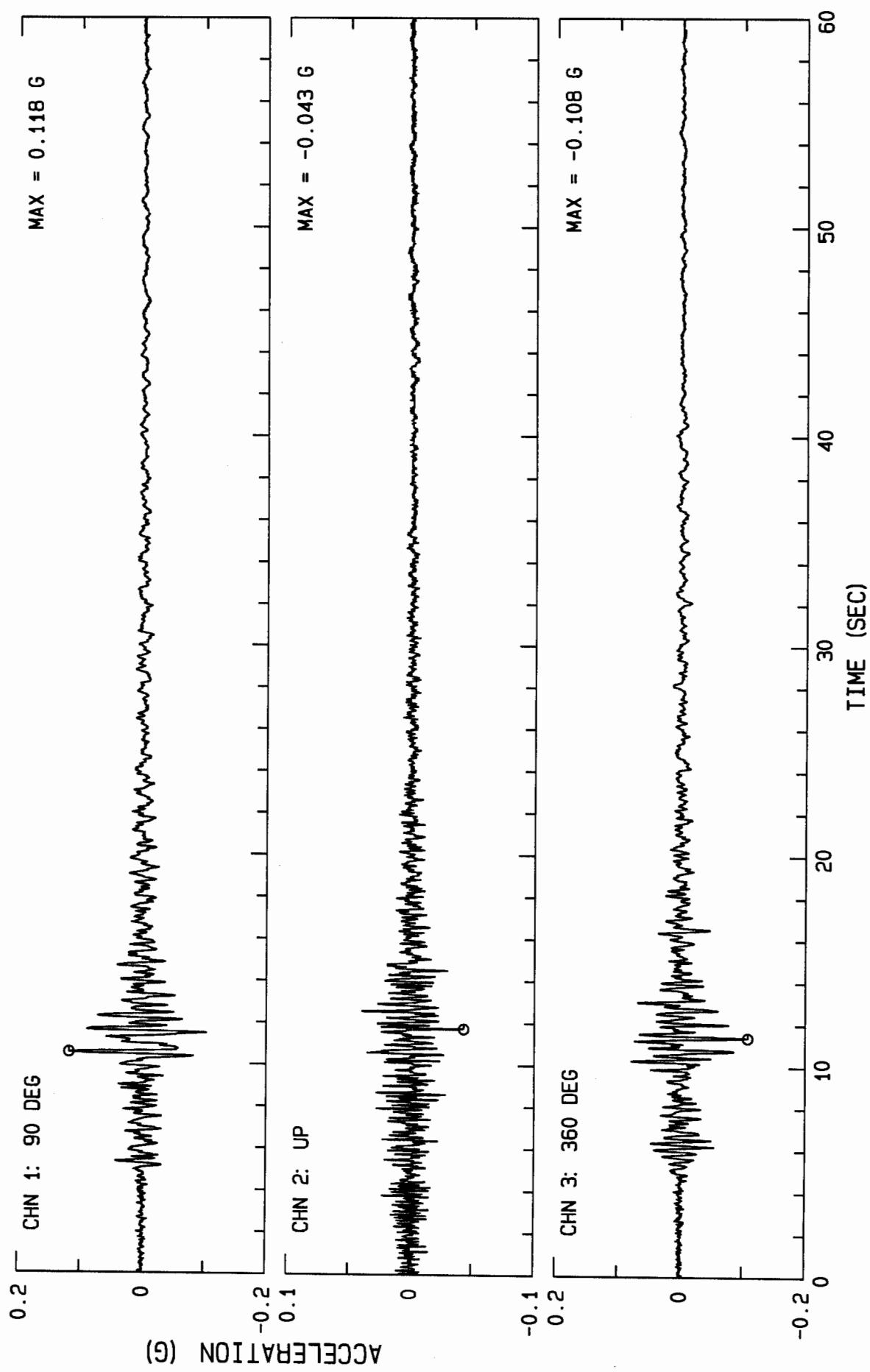


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
ROLLING HILLS ESTATES-RANCHO VISTA SCH.

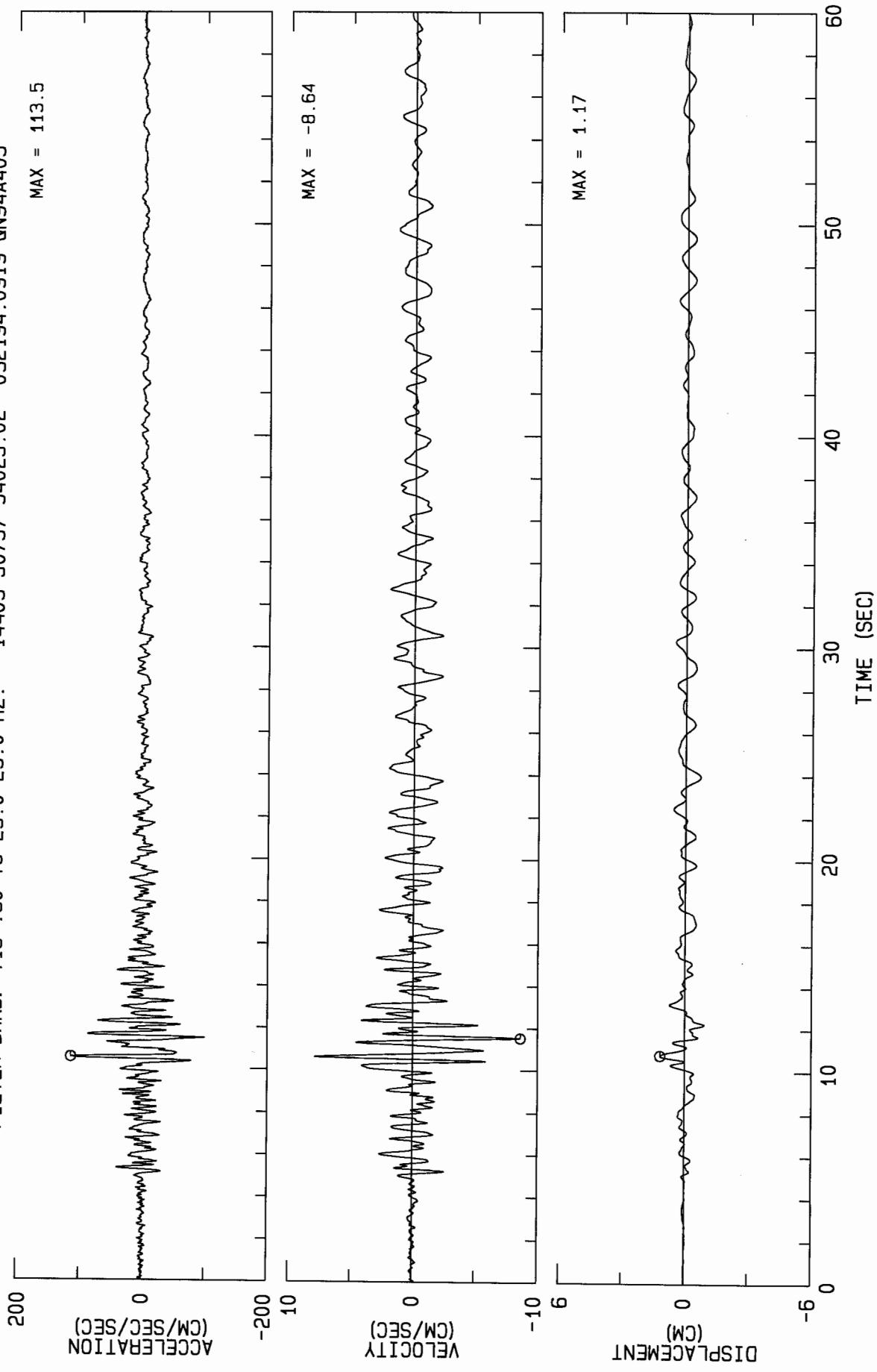
UNCORRECTED ACCELEROMGRAM 14405-S0757-94025.02 032194.0911-QN94A405

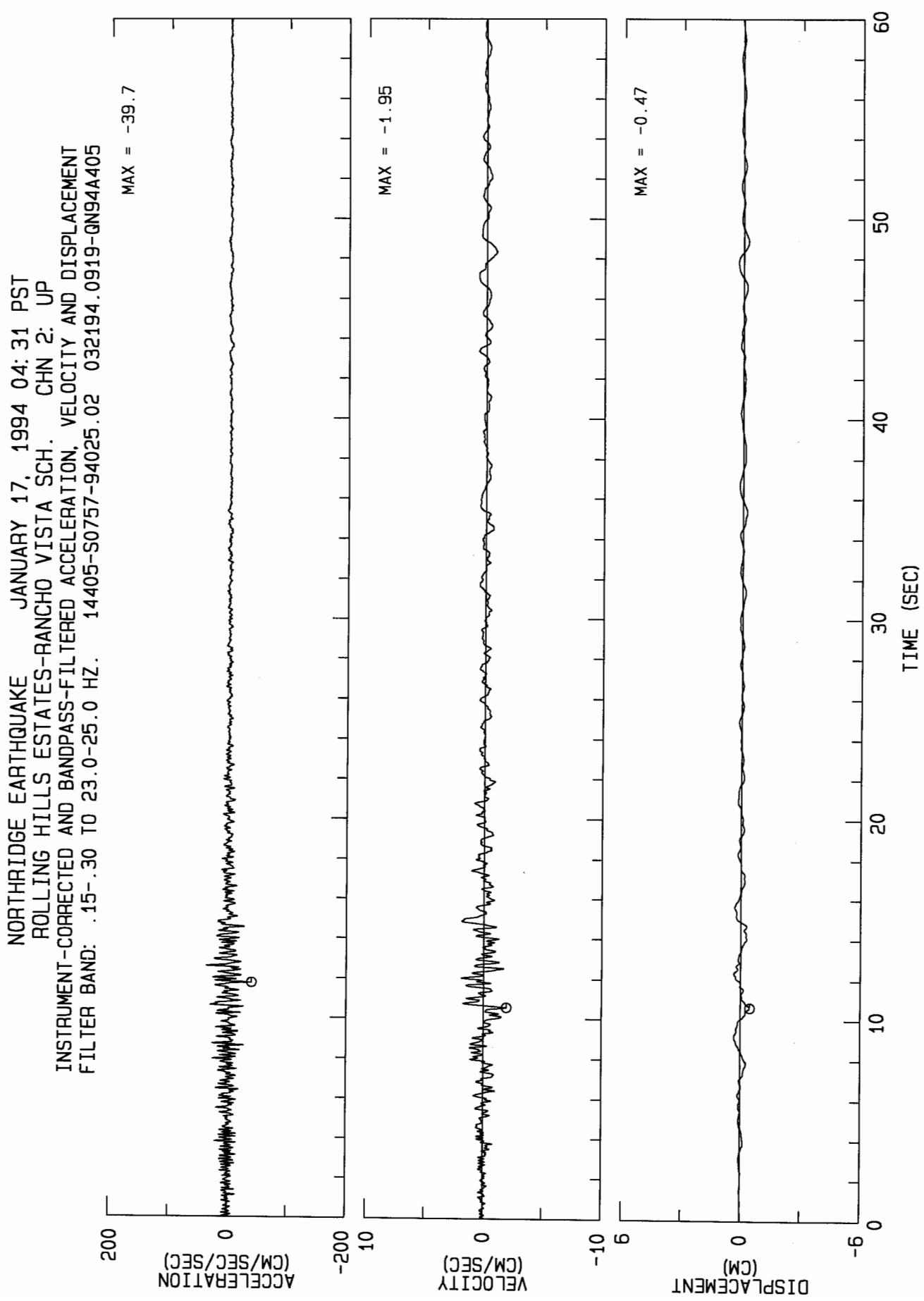


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
ROLLING HILLS ESTATES-RANCHO VISTA SCH.
UNCORRECTED ACCELERogram 14405-S0757-94025.02 032194.0911-0N94A405

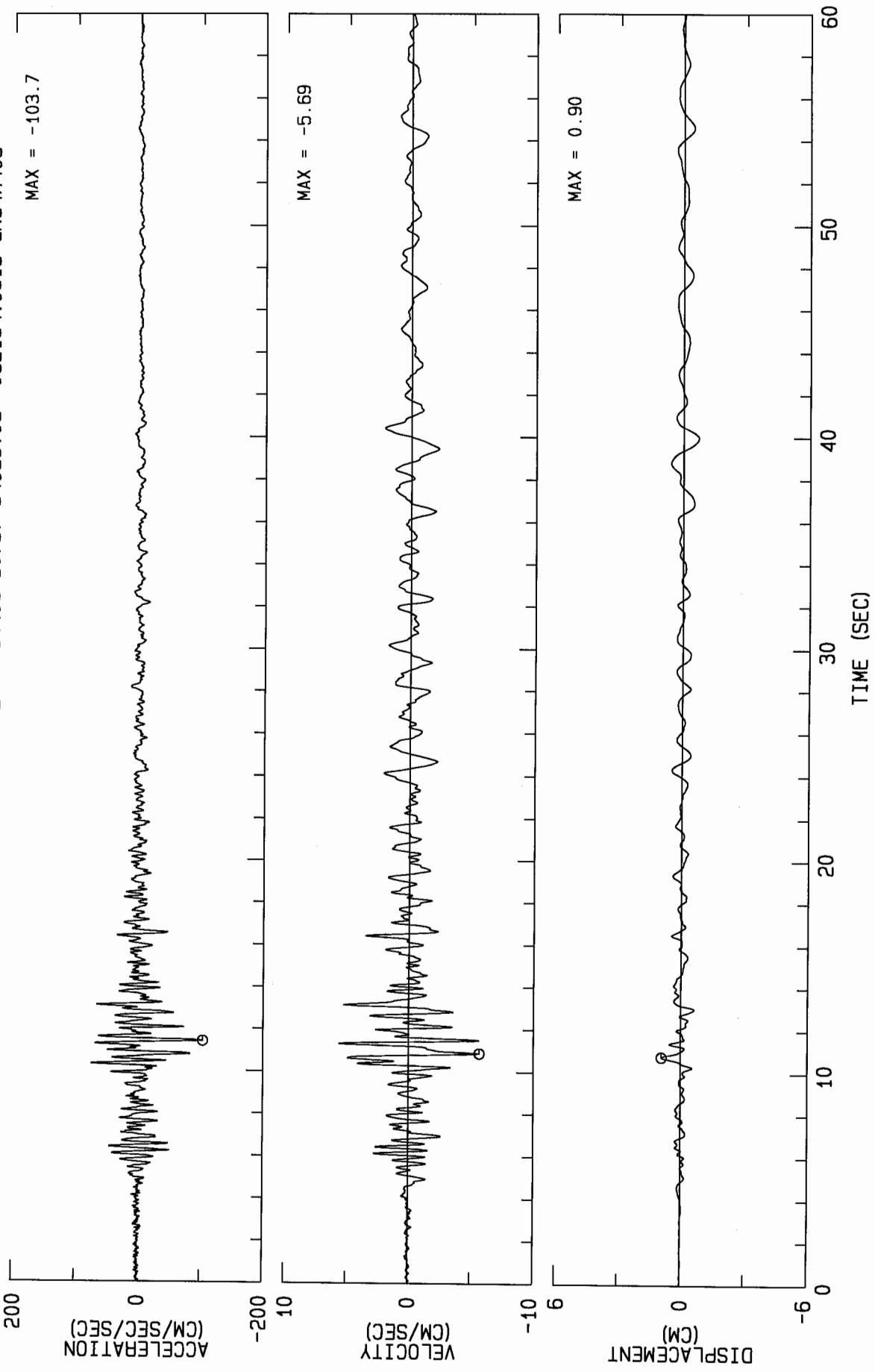


NORTHridge EARTHQUAKE JANUARY 17, 1994 04:31 PST
 ROLLING HILLS, ESTATES-RANCHO VISTA SCH. CHN 1: 90 DEG
 INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
 FILTER BAND: .15-.30 TO 23.0-25.0 Hz. 14405-S0757-94025.02 032194.0919-QN94A405





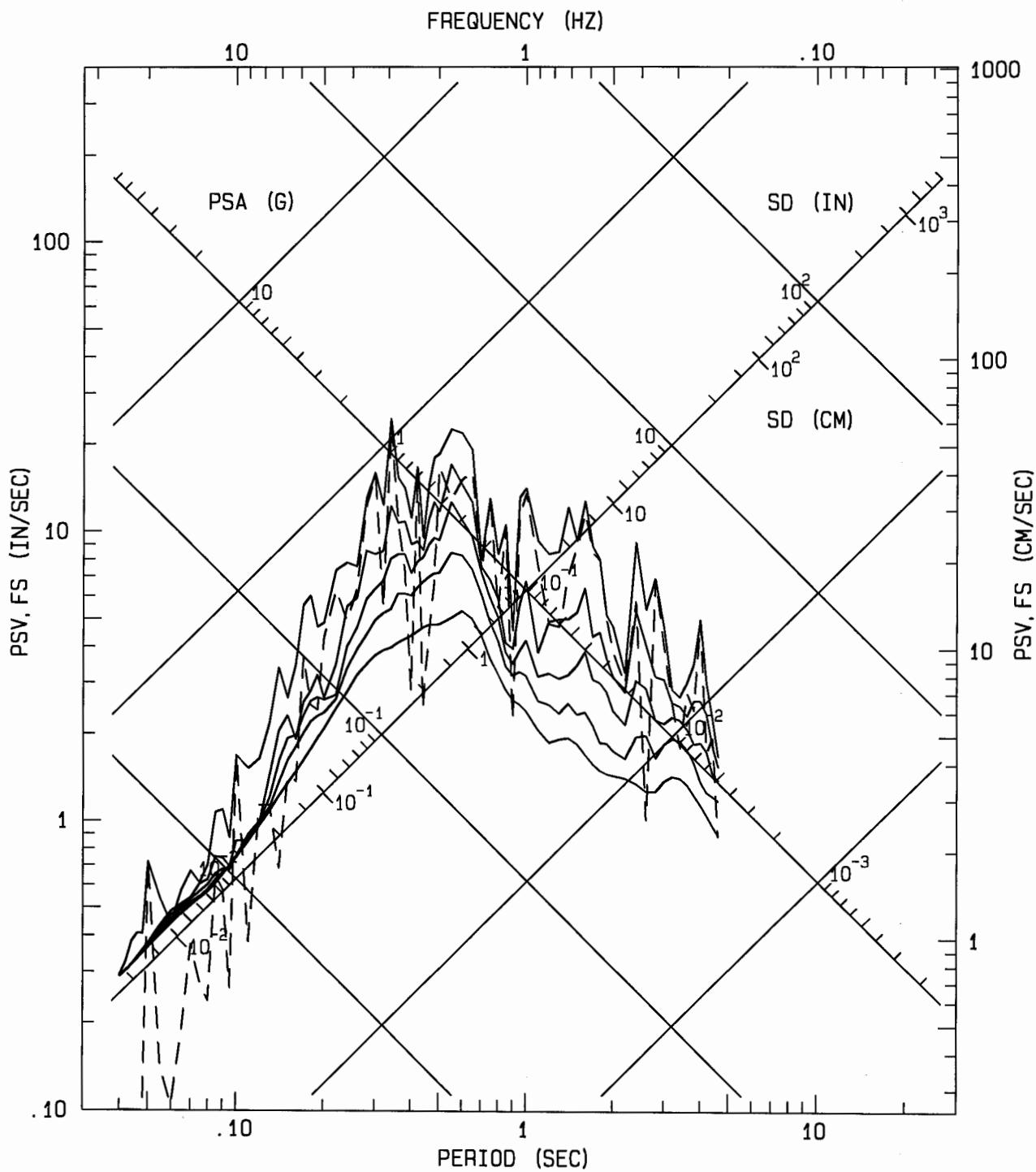
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04: 31 PST
ROLLING HILLS ESTATES-RANCHO VISTA SCH. CHN 3: 360 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .15-.30 TO 23.0-25.0 Hz. 14405-S0757-94025.02 032194.0919-QN94A405



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 ROLLING HILLS ESTATES-RANCHO VISTA SCH.
 CHN 1: 90 DEG

ACCELEROGRAF BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 Hz.
 14405-S0757-94025.02 042594.1031-QN94A405

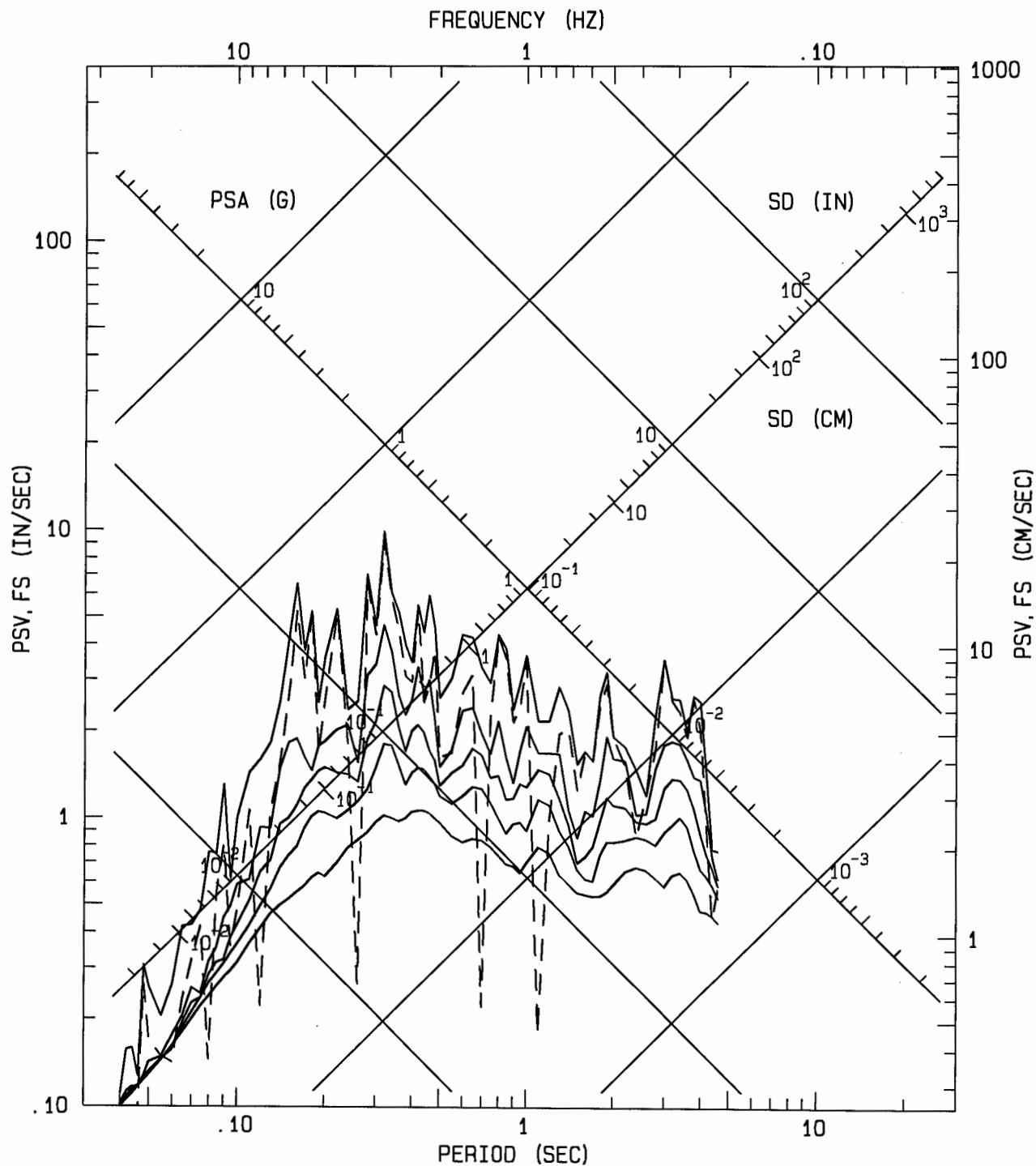
— RESPONSE SPECTRA: PSV, PSA & SD — — FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 ROLLING HILLS ESTATES-RANCHO VISTA SCH.
 CHN 2: UP

ACCELEROGRAF BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 Hz.
 14405-S0757-94025.02 042594.1031-QN94A405

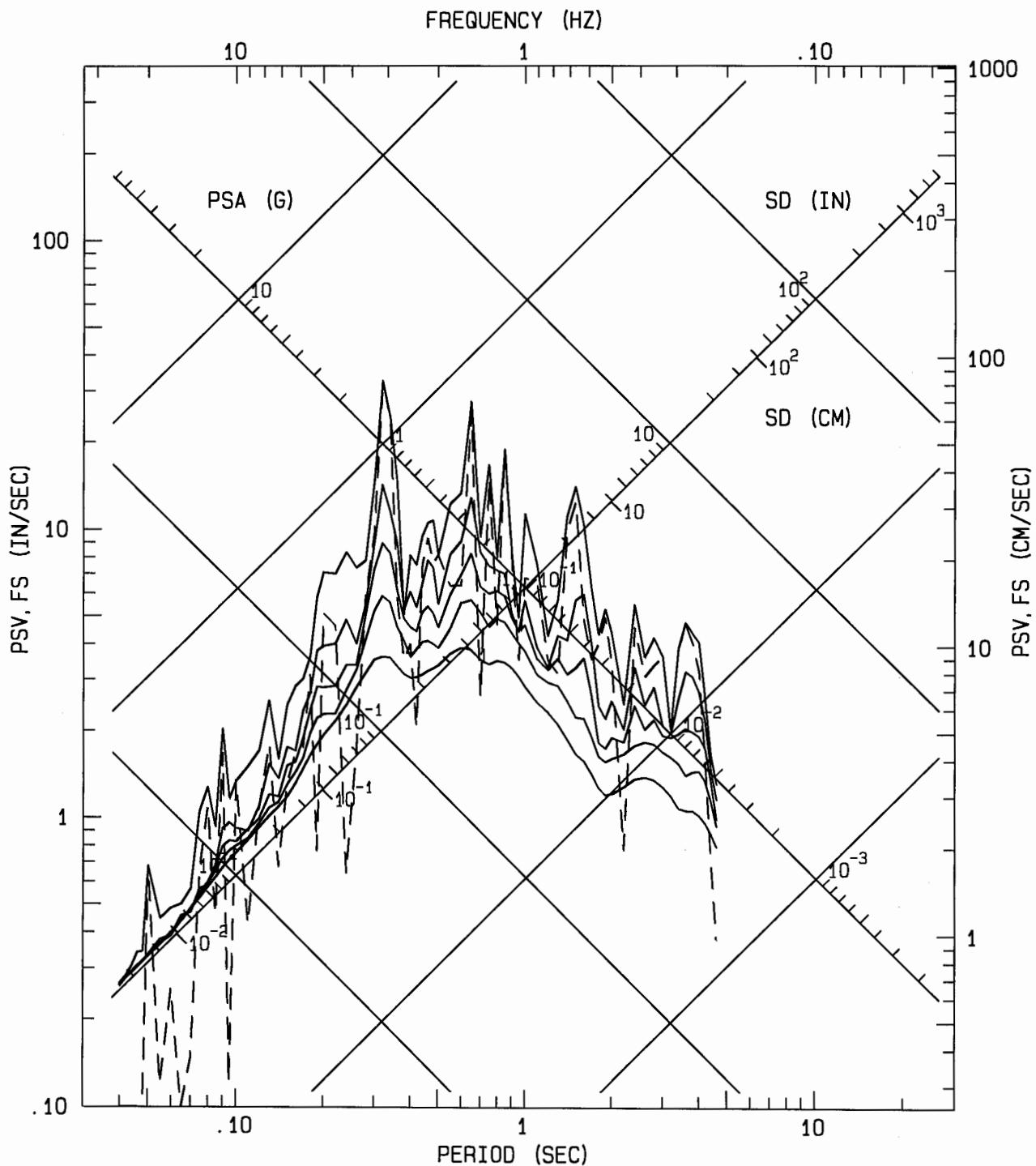
— RESPONSE SPECTRA: PSV, PSA & SD — — FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



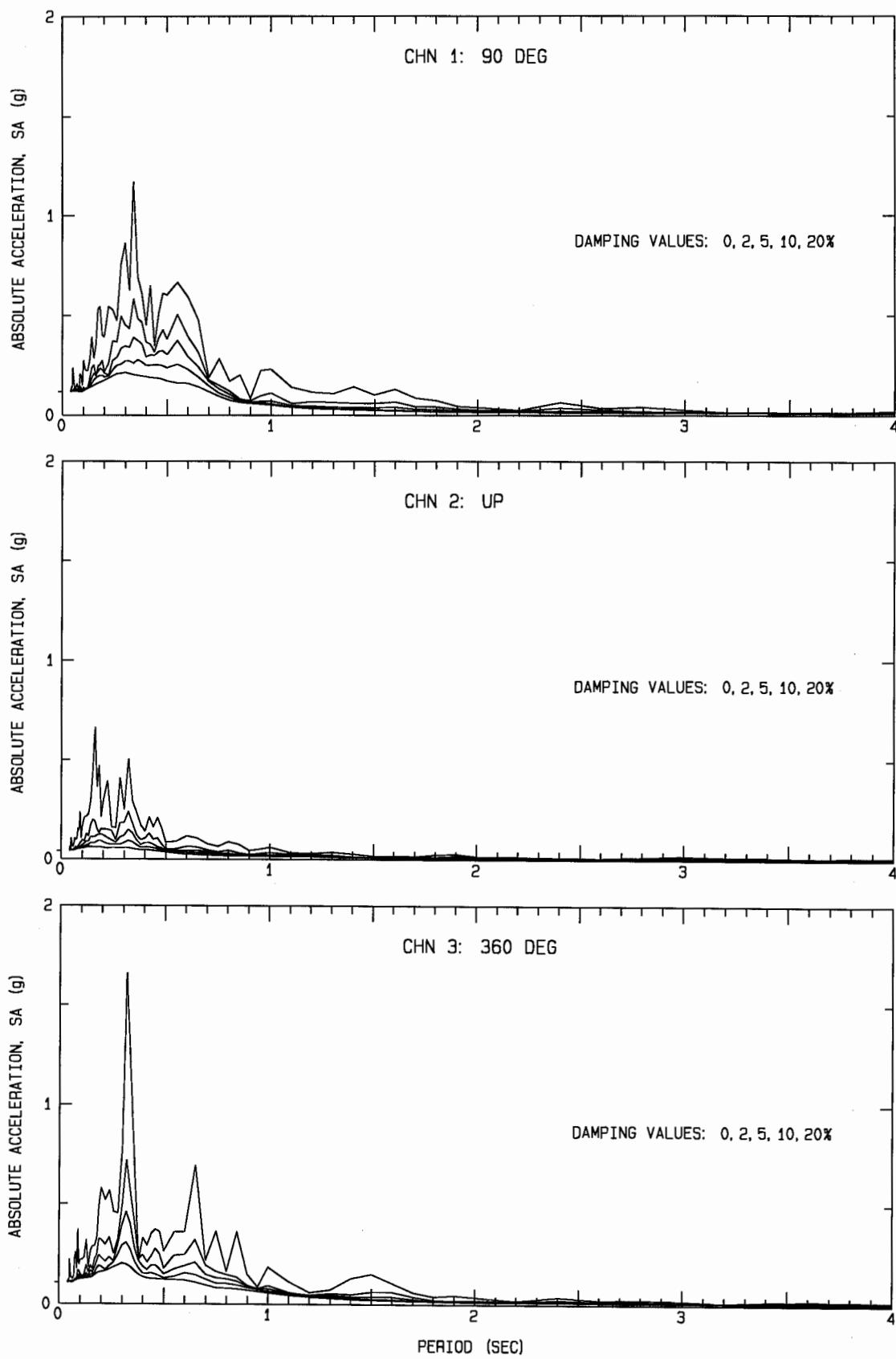
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 ROLLING HILLS ESTATES-RANCHO VISTA SCH.
 CHN 3: 360 DEG

ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 Hz.
 14405-S0757-94025.02 042594.1031-QN94A405

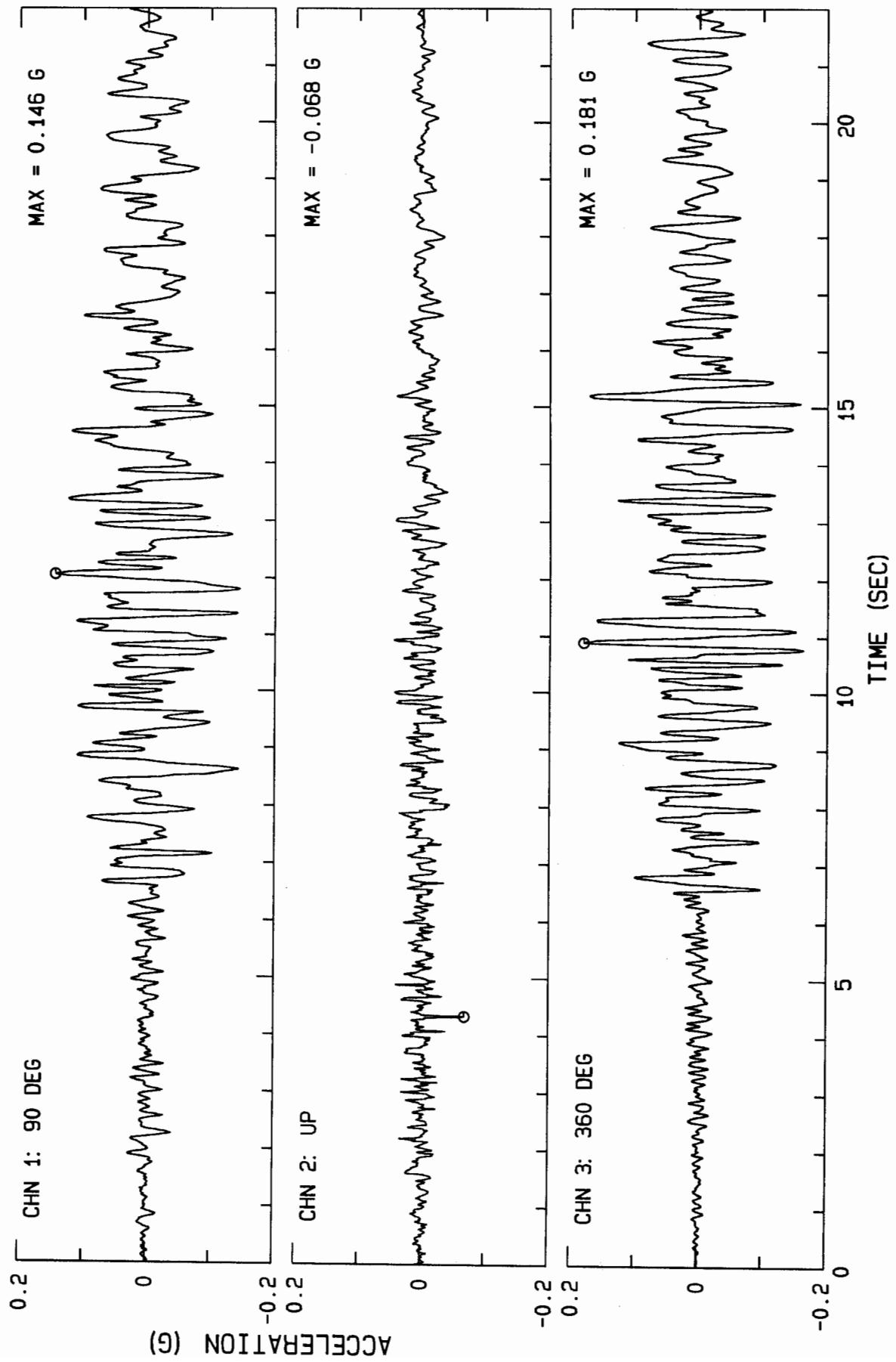
— RESPONSE SPECTRA: PSV, PSA & SD — — FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



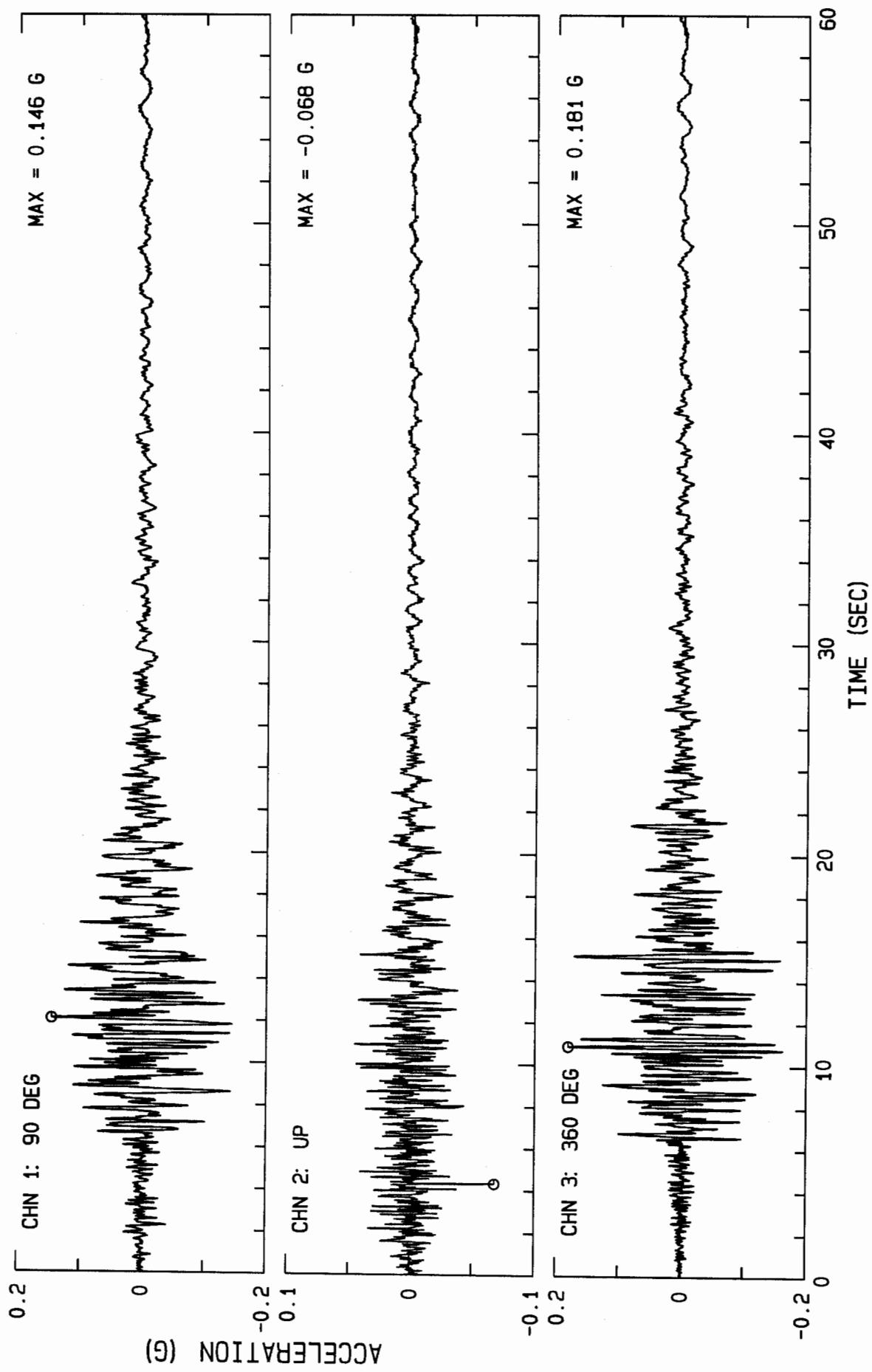
NORTHridge EARTHQUAKE JANUARY 17, 1994 04:31 PST
ROLLING HILLS ESTATES-RANCHO VISTA SCH.
ACCELEROGRAm BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 Hz.
14405-S0757-94025.02 042594.1031-QN94A405



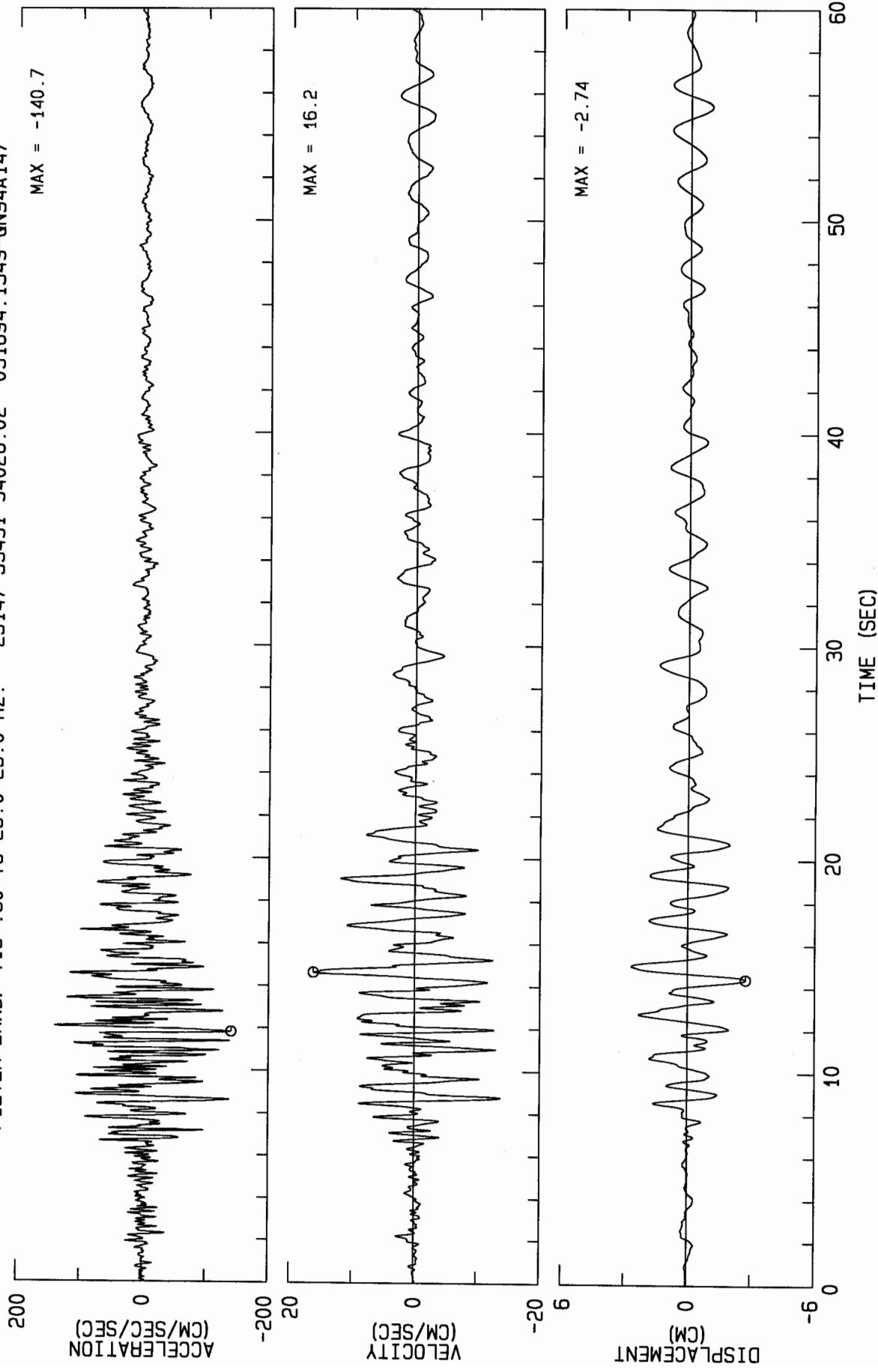
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
POINT MUGU - NAVAL AIR STATION
UNCORRECTED ACCELEROMETER
25147-S3491-94026.02 031694.1542-0N94A147



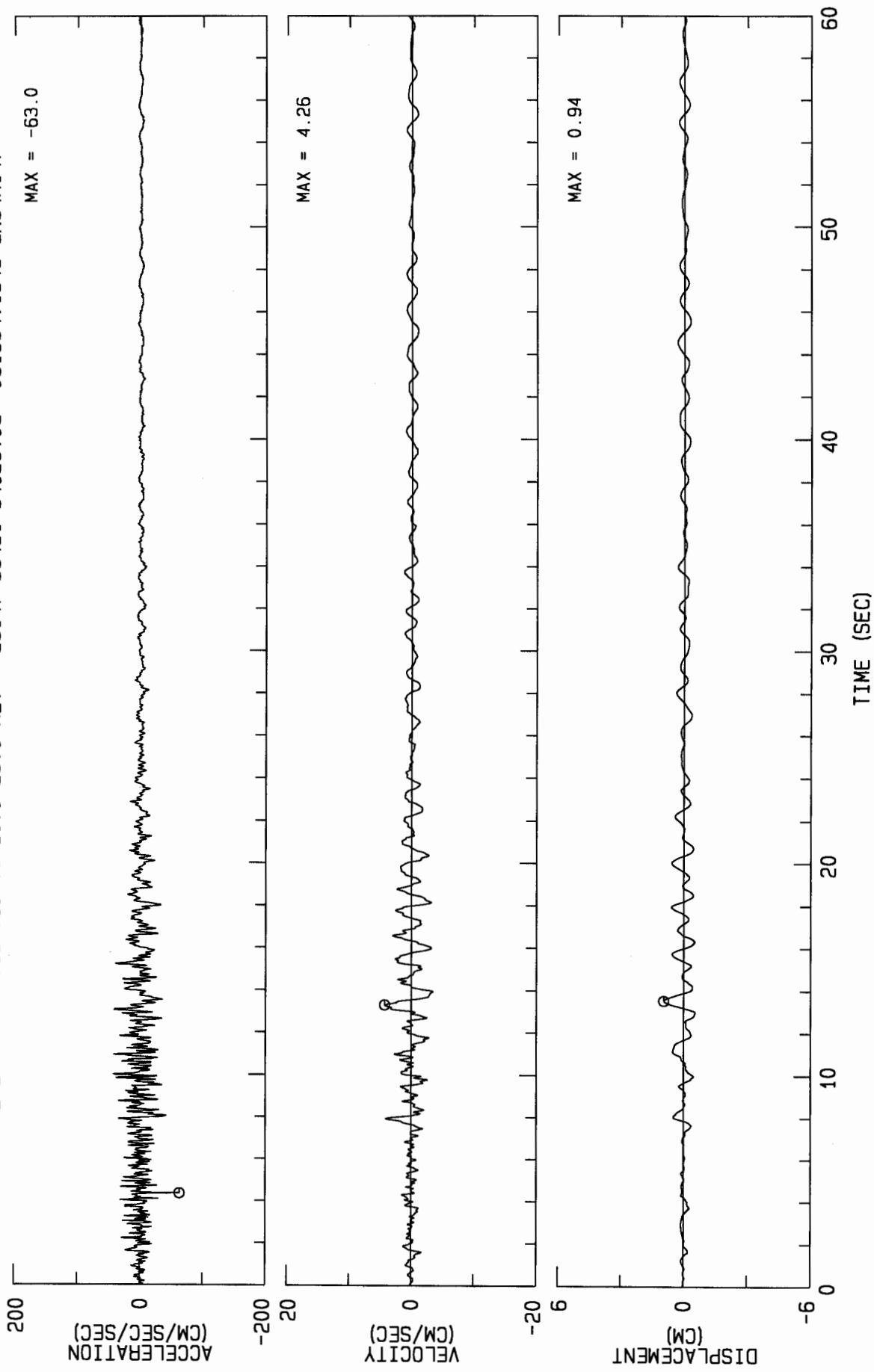
NORTHridge EARTHQUAKE JANUARY 17, 1994 04:31 PST
POINT MUGU - NAVAL AIR STATION
UNCORRECTED ACCELEROMETER PROGRAM 25147-S3491-94026.02 031694.1542-QN94A147



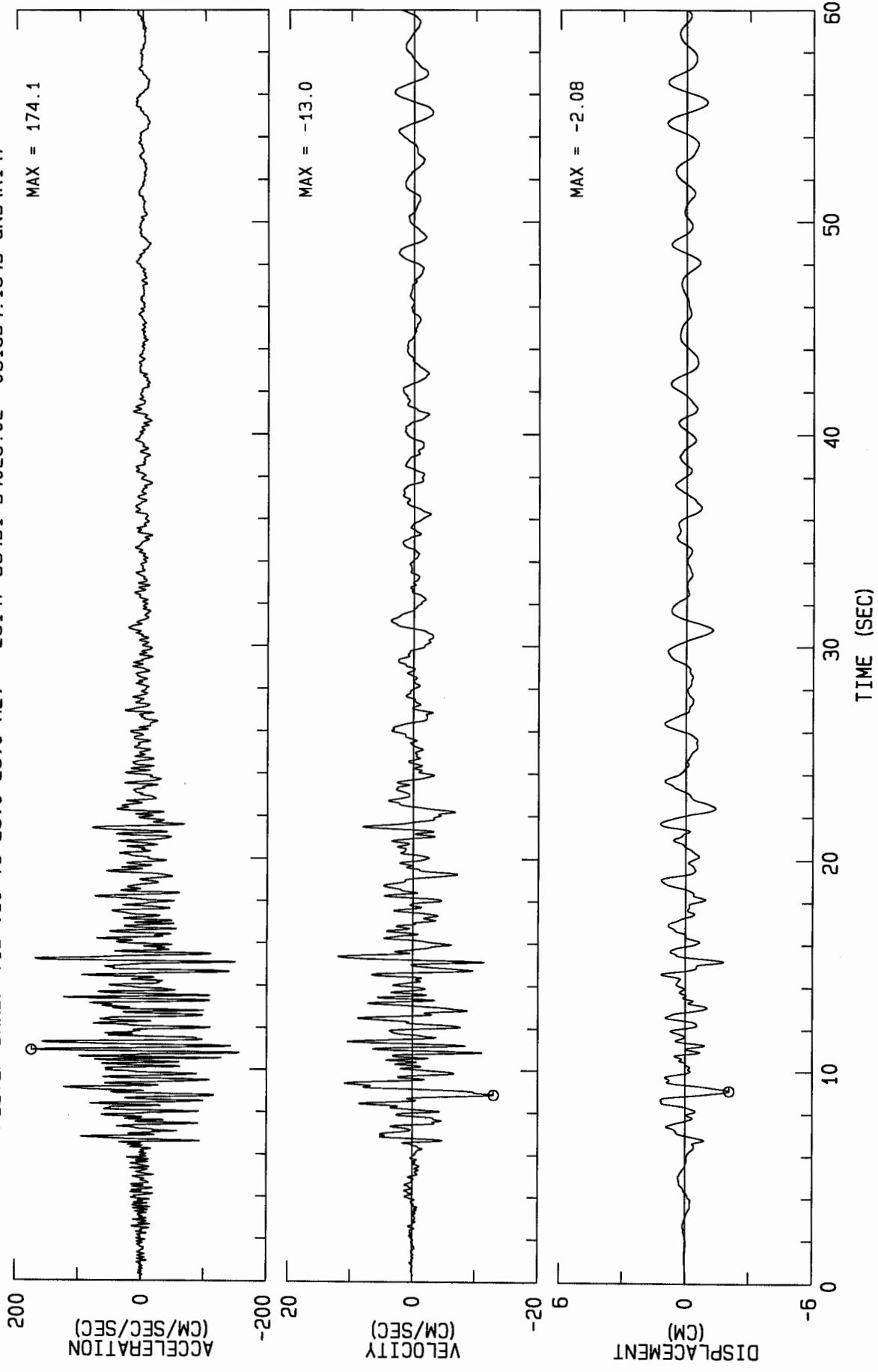
NORTHridge EARTHQUAKE JANUARY 17, 1994 04:31 PST
POINT MUGU - NAVAL AIR STATION CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .15-.30 TO 23.0-25.0 HZ. 25147-S3491-94026.02 031694.1549-QN94A147



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
POINT MUGU - NAVAL AIR STATION CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .15-.30 TO 23.0-25.0 Hz. 25147-S3491-94026.02 031694.1549-QN94A147

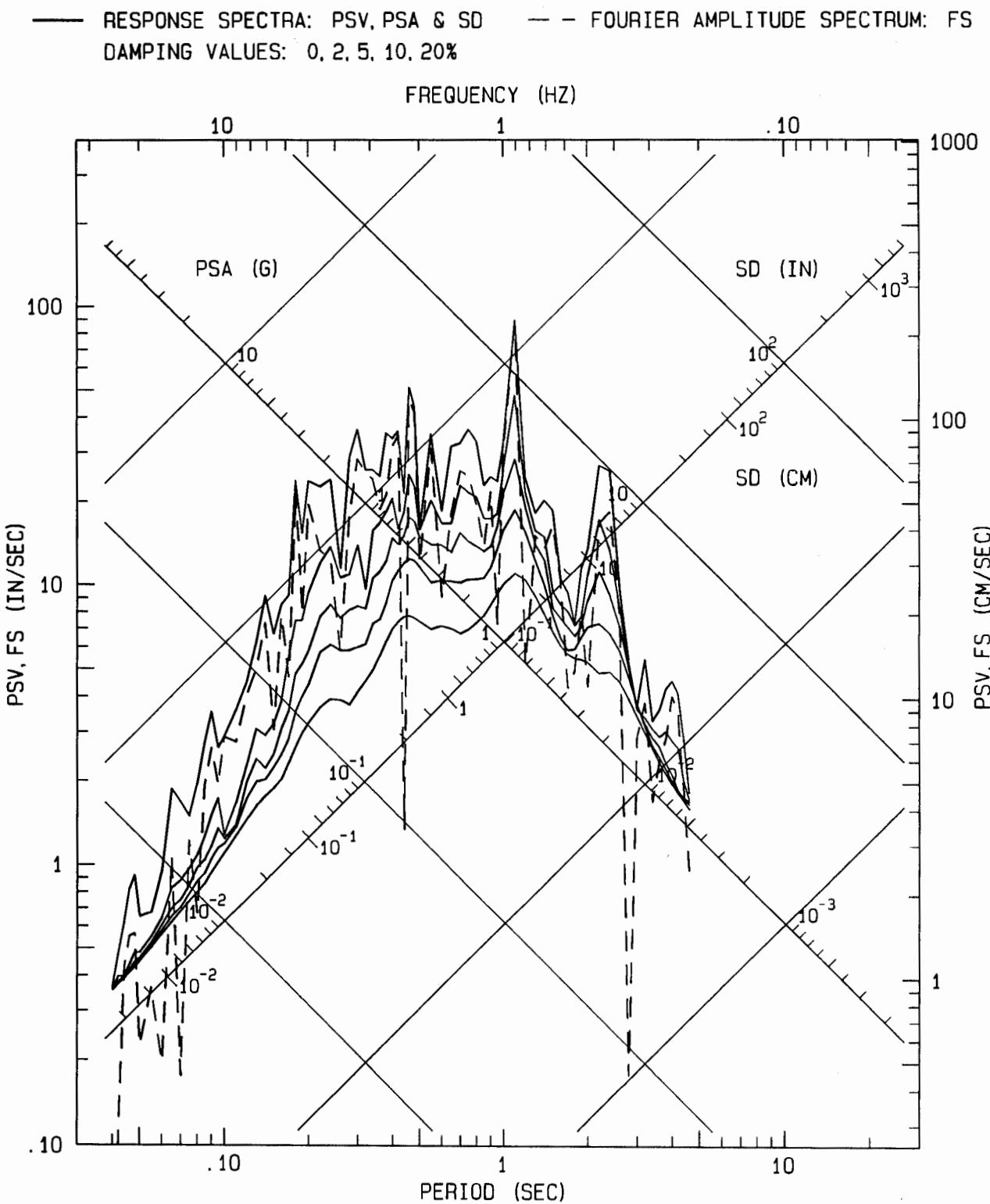


NORTHridge EARTHQUAKE JANUARY 17, 1994 04:31 PST
POINT MUGU - NAVAL AIR STATION CHN 3: 360 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .15-.30 TO 23.0-25.0 HZ. 25147-S3491-94026.02 031694.1549-QN94A147



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 POINT MUGU - NAVAL AIR STATION
 CHN 1: 90 DEG

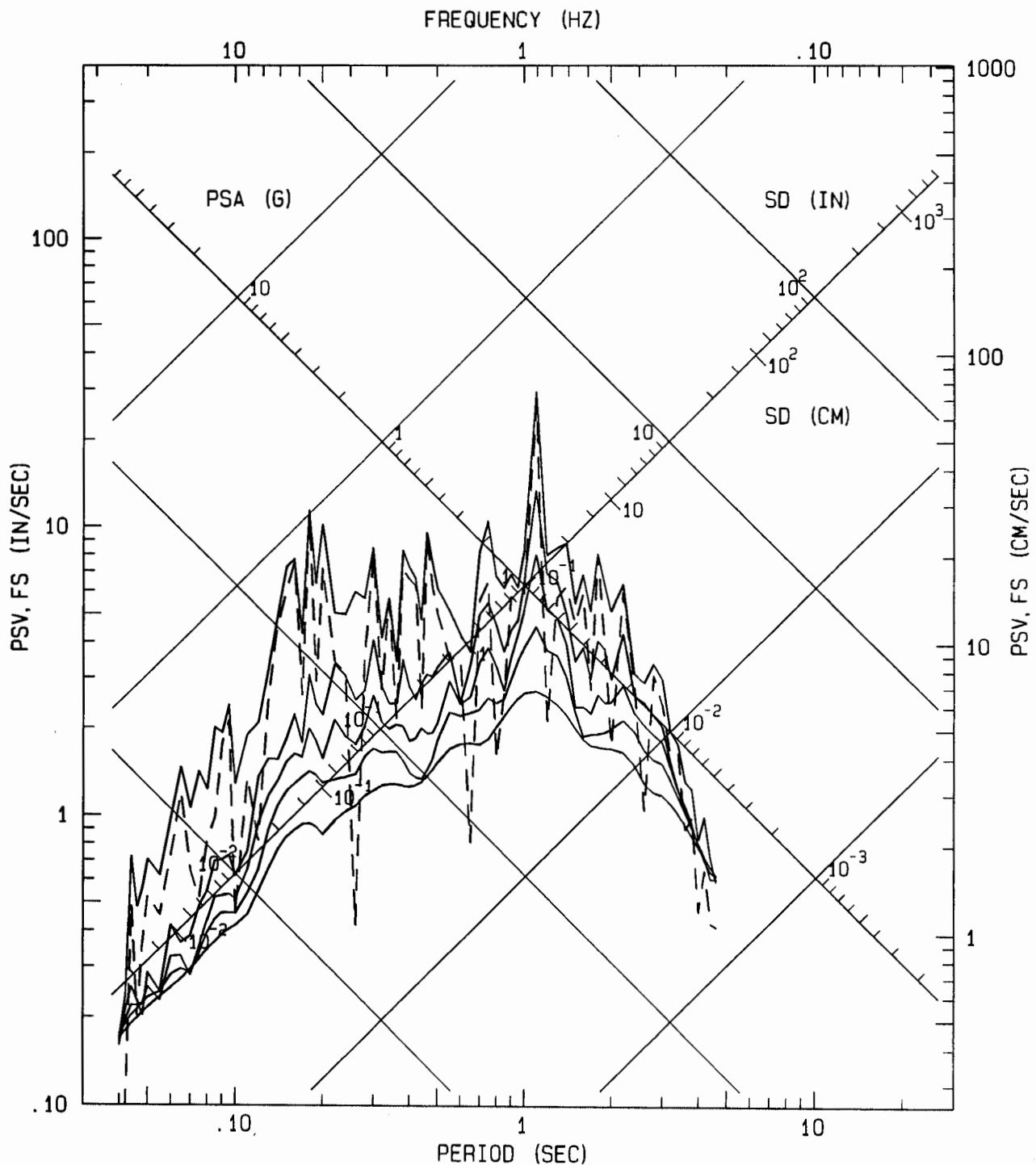
ACCELEROGRAF BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 Hz.
 25147-S3491-94026.02 042594.0826-QN94A147



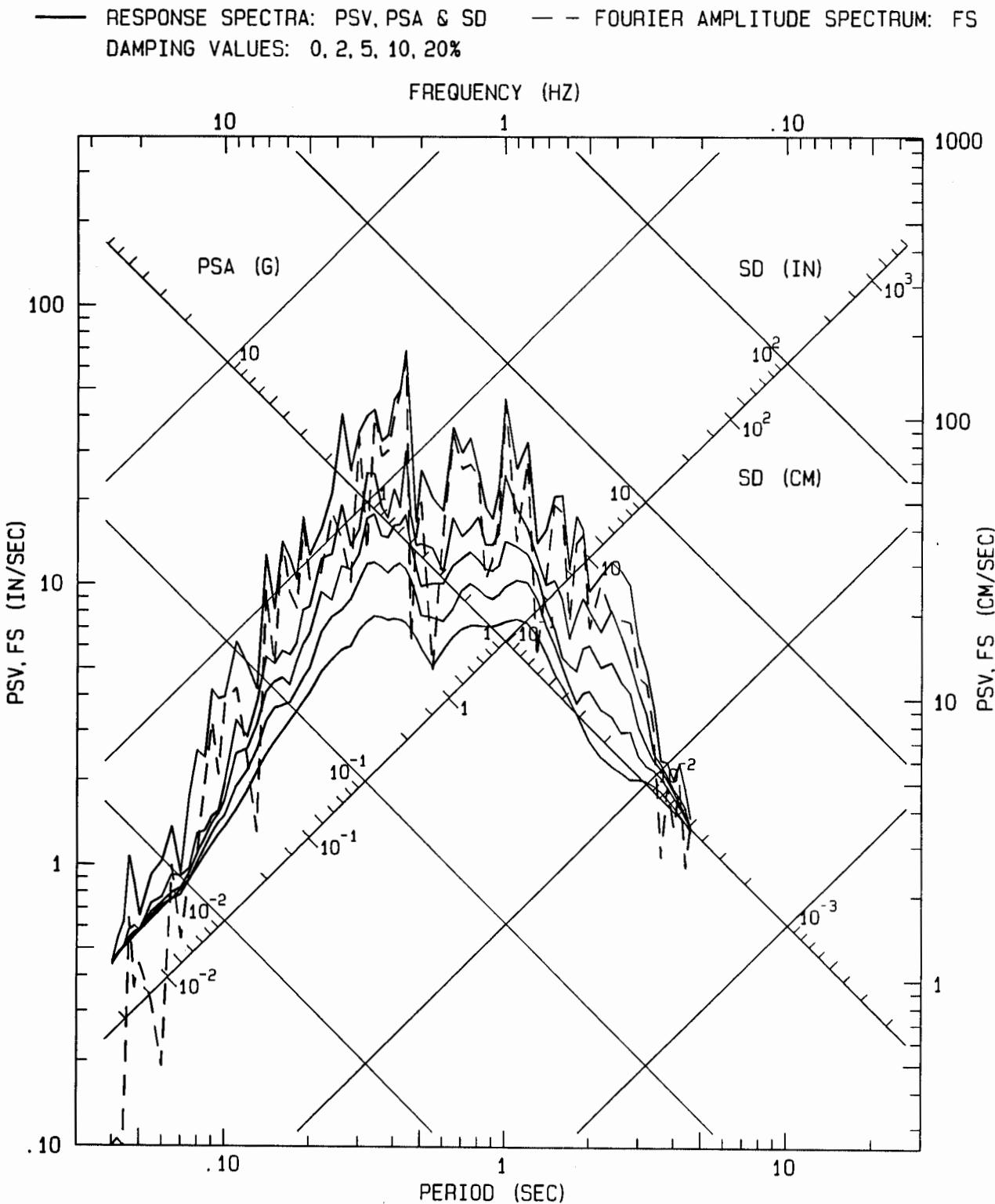
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 POINT MUGU - NAVAL AIR STATION
 CHN 2: UP

ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 Hz.
 25147-S3491-94026.02 042594.0826-QN94A147

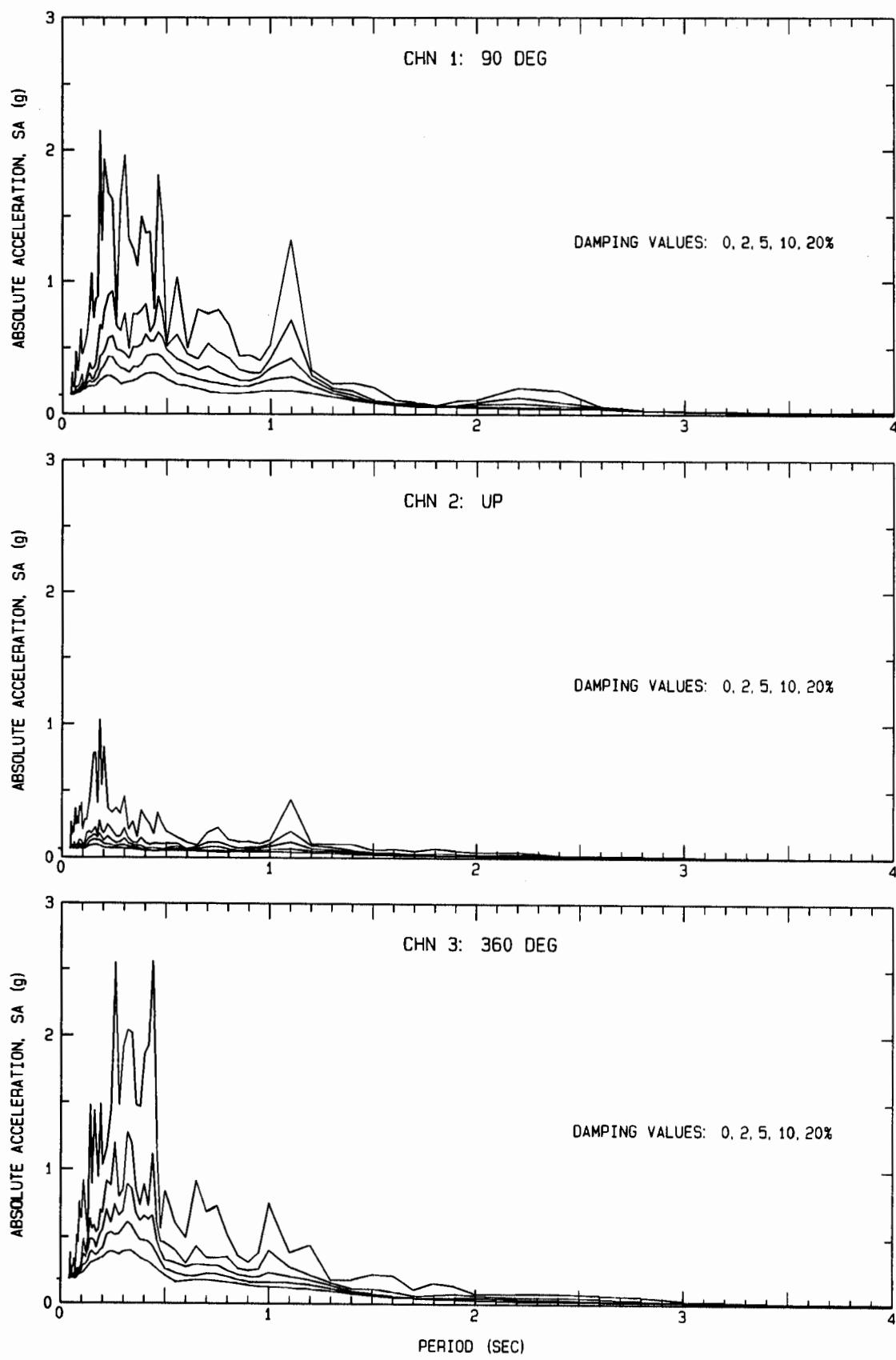
— RESPONSE SPECTRA: PSV, PSA & SD — — FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



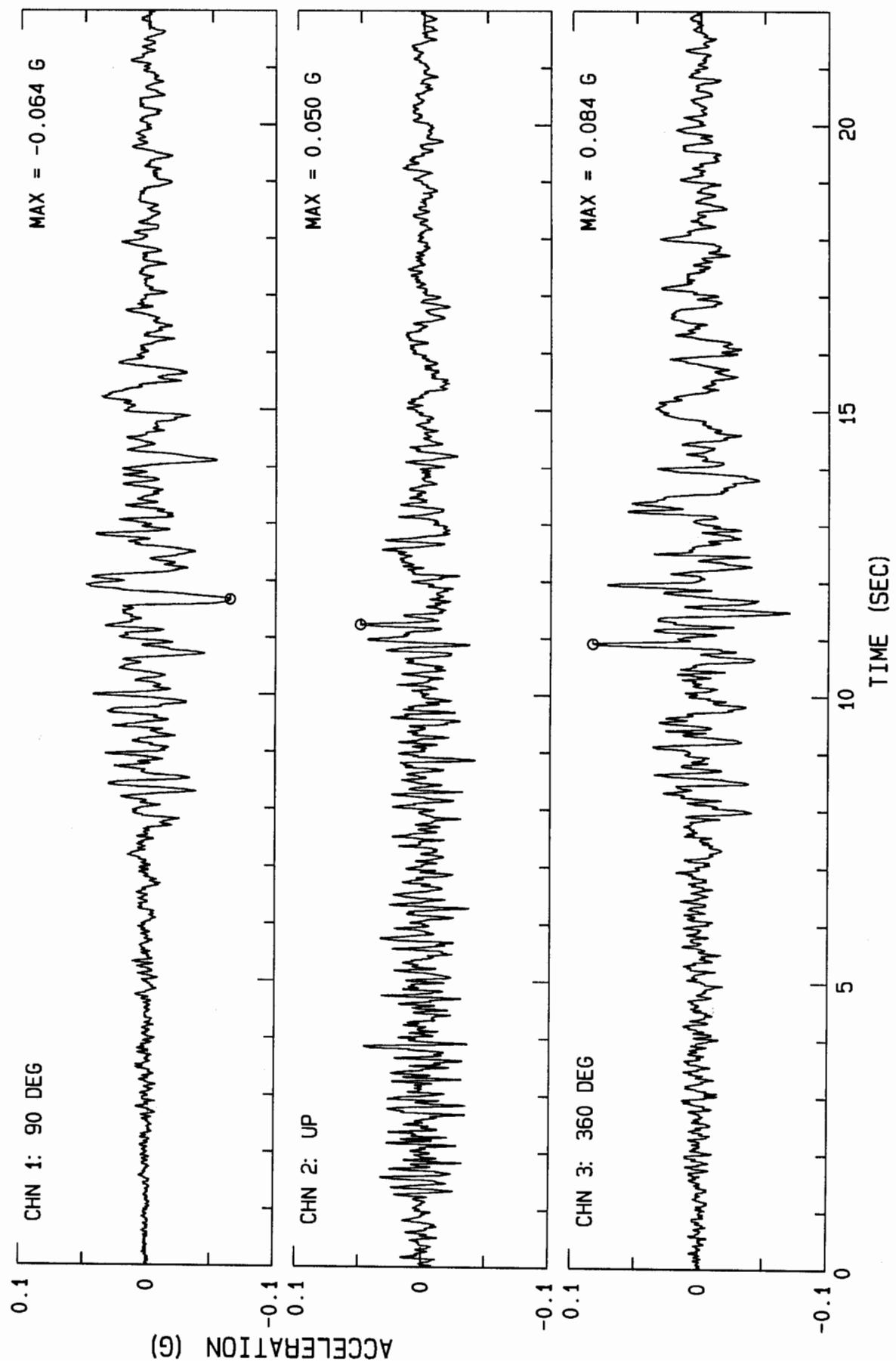
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 POINT MUGU - NAVAL AIR STATION
 CHN 3: 360 DEG
 ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 Hz.
 25147-S3491-94026.02 042594.0826-QN94A147



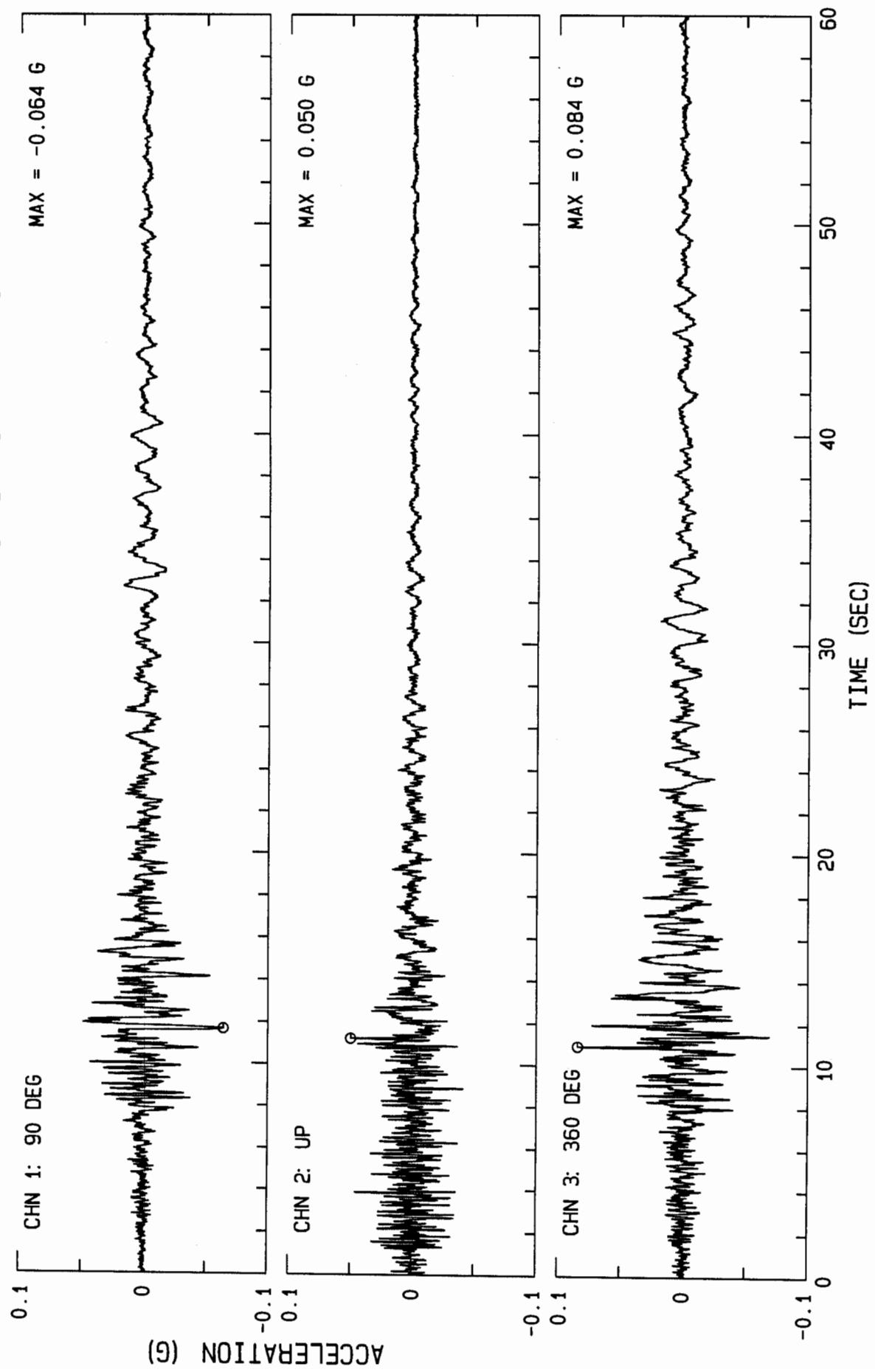
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
POINT MUGU - NAVAL AIR STATION
ACCELEROGRAF BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 HZ.
25147-S3491-94026.02 042594.0826-QN94A147



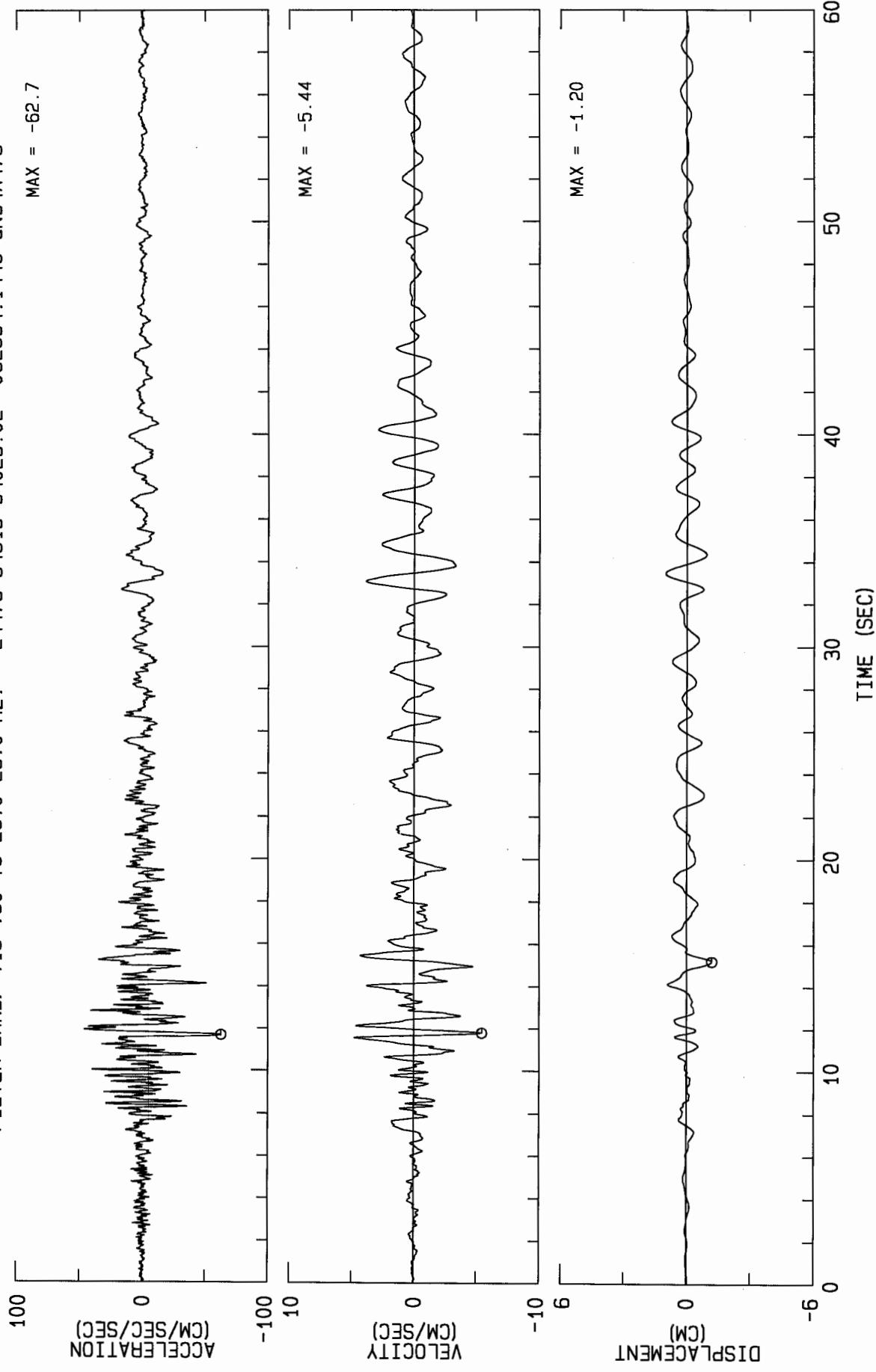
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LANCASTER - FOX AIRFIELD GROUNDS
UNCORRECTED ACCELERGRAM 24475-S4819-94026.02 032894.1437-QN94A475



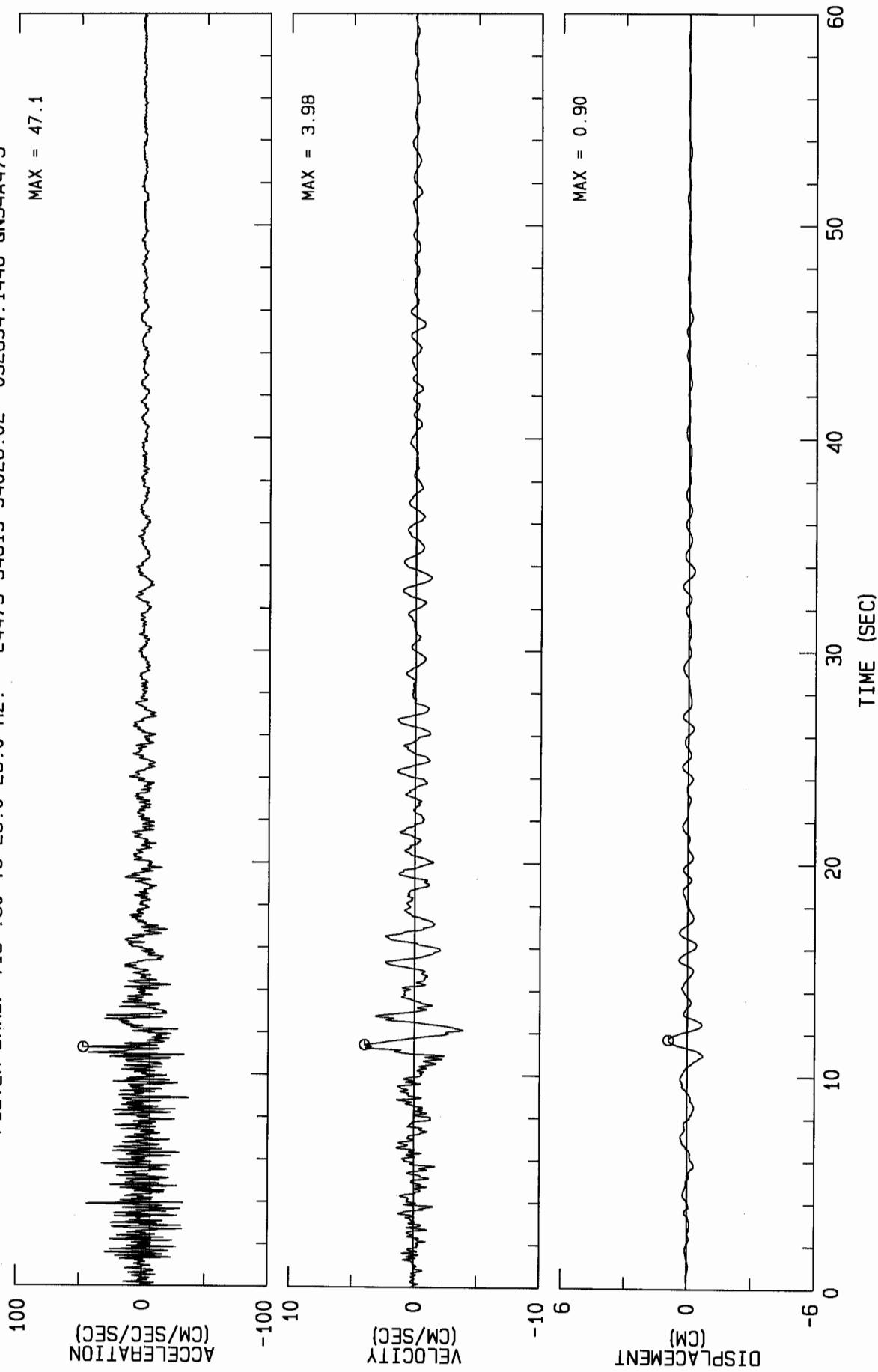
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LANCASTER - FOX AIRFIELD GROUNDS
UNCORRECTED ACCELEROMGRAM 24475-S4819-94026.02 032894.1437-QN94A475



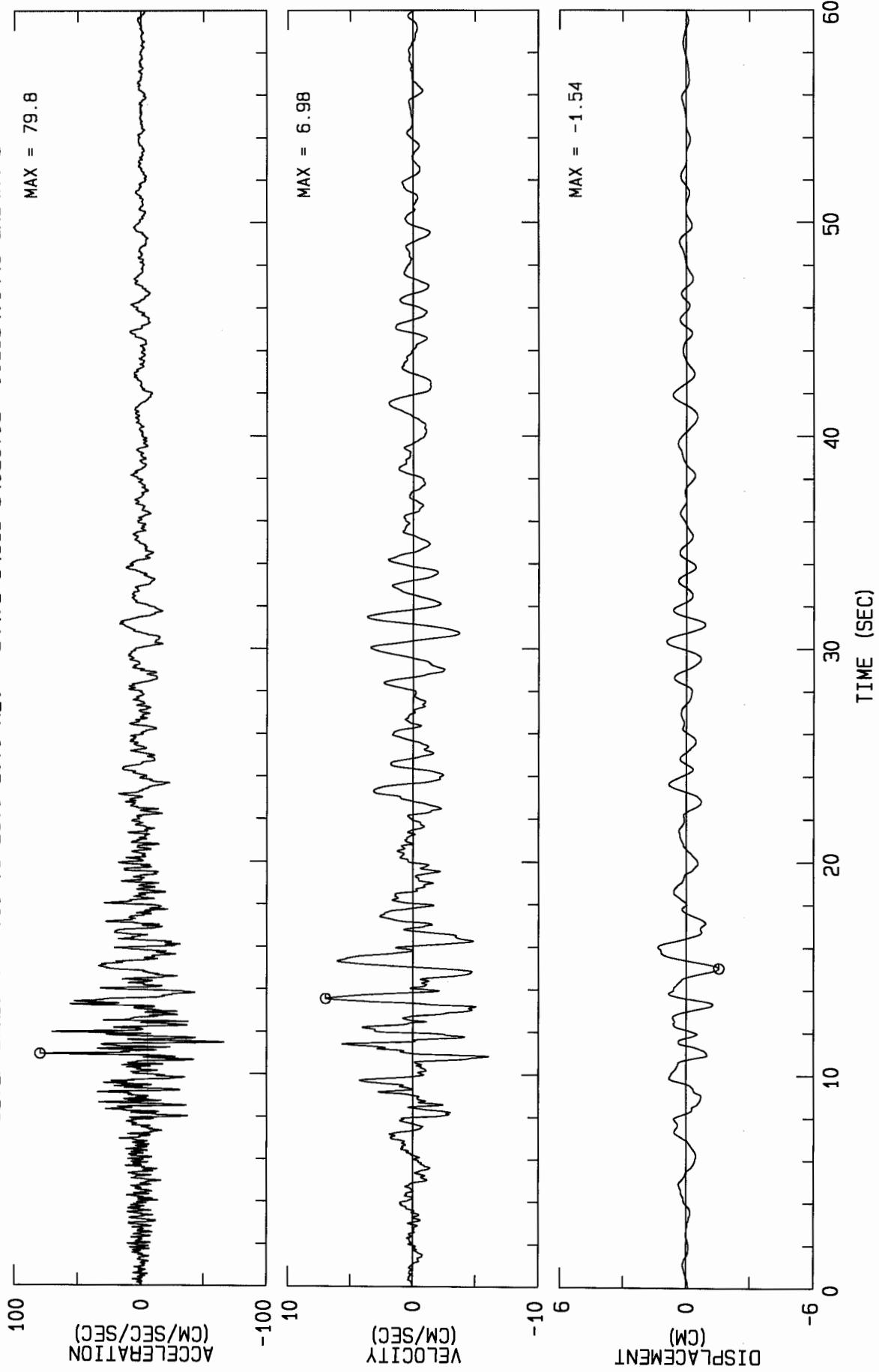
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LANCASTER - FOX AIRFIELD GROUNDS CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .15-.30 TO 23.0-25.0 HZ. 24475-S4B19-94026.02 032894.1446-QN94A475



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LANCASTER - FOX AIRFIELD GROUNDS CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .15-.30 TO 23.0-25.0 Hz. 24475-S4819-94026.02 032894.1446-QN94A475

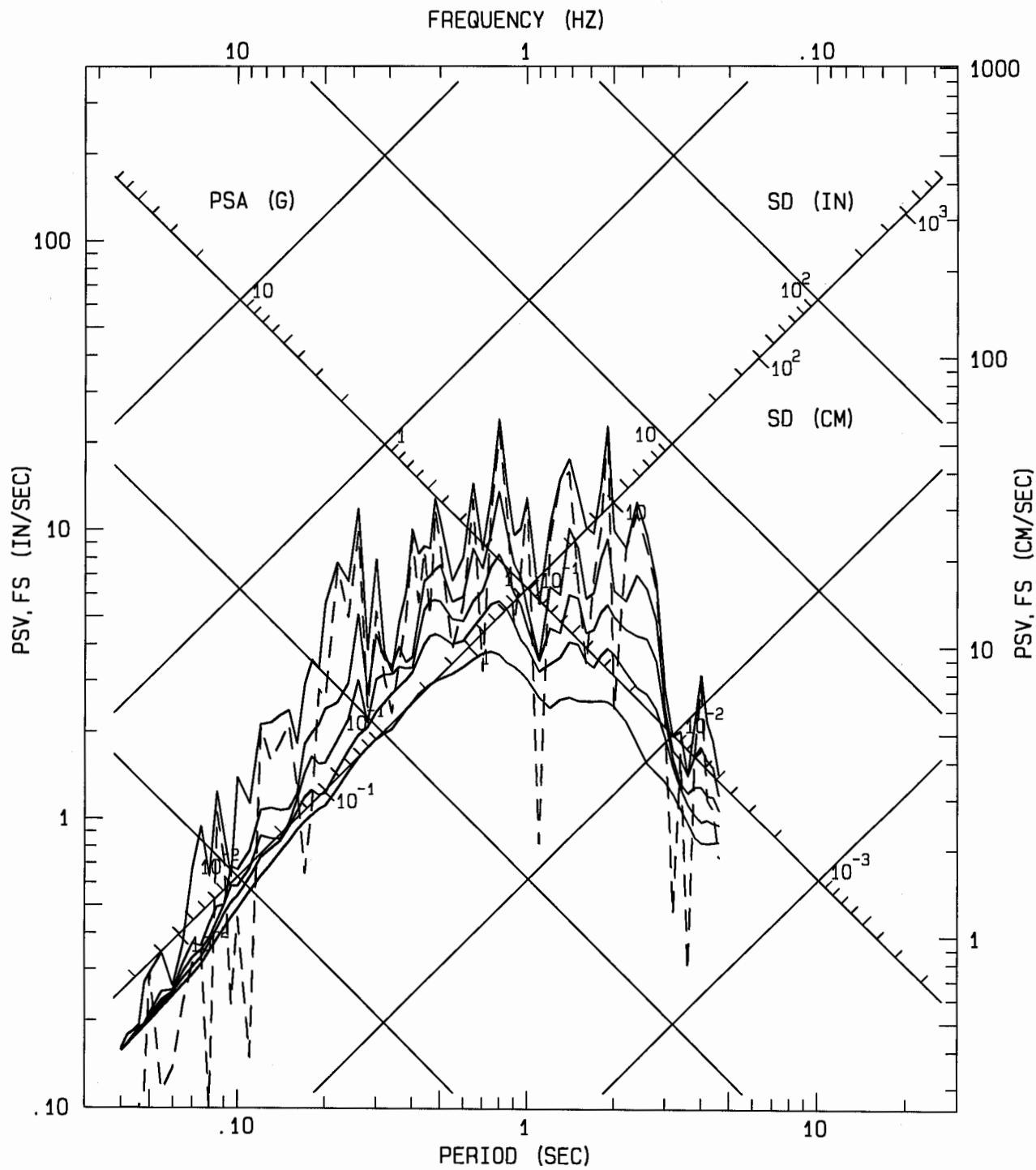


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LANCASTER - FOX AIRFIELD GROUNDS CHN 3: 360 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .15-.30 TO 23.0-25.0 HZ. 24475-S4B19-94026.02 032894.1446-QN94A475



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 LANCASTER - FOX AIRFIELD GROUNDS
 CHN 1: 90 DEG
 ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 Hz.
 24475-S4819-94026.02 042594.0955-QN94A475

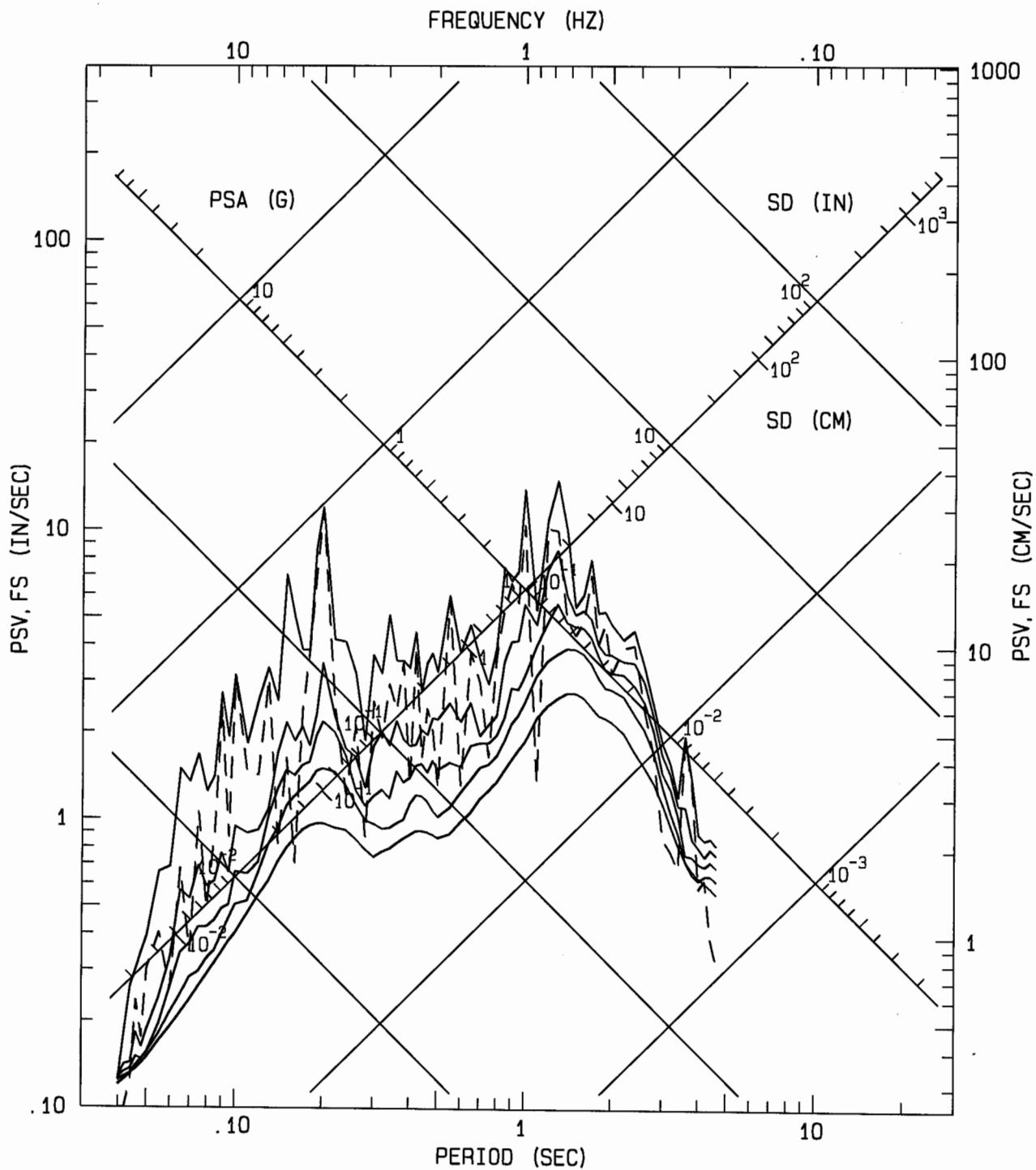
— RESPONSE SPECTRA: PSV, PSA & SD — — FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LANCASTER - FOX AIRFIELD GROUNDS
CHN 2: UP

ACCELEROGRAF BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 Hz.
24475-S4819-94026.02 042594.0955-QN94A475

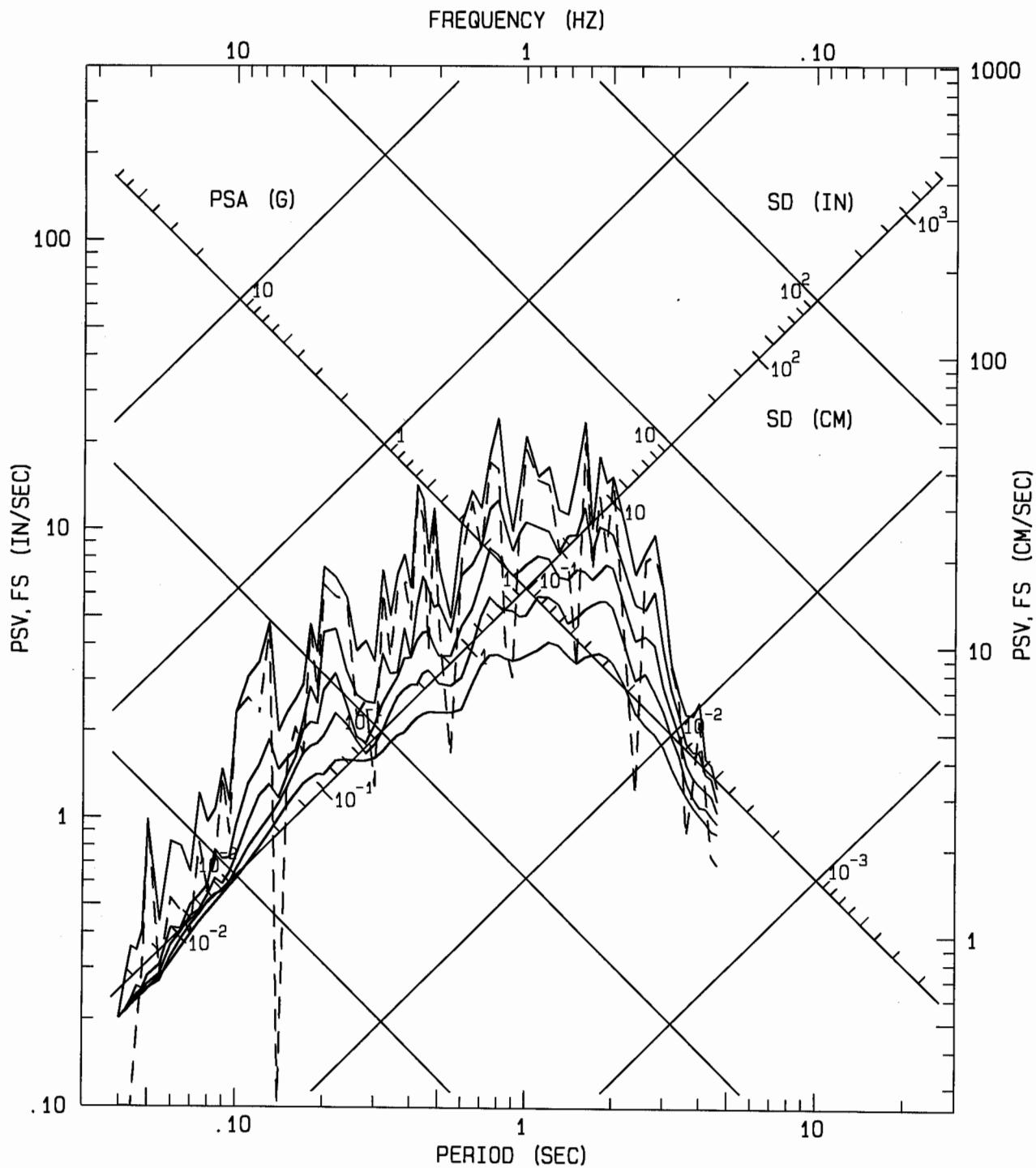
— RESPONSE SPECTRA: PSV, PSA & SD — — FOURIER AMPLITUDE SPECTRUM: FS
DAMPING VALUES: 0, 2, 5, 10, 20%



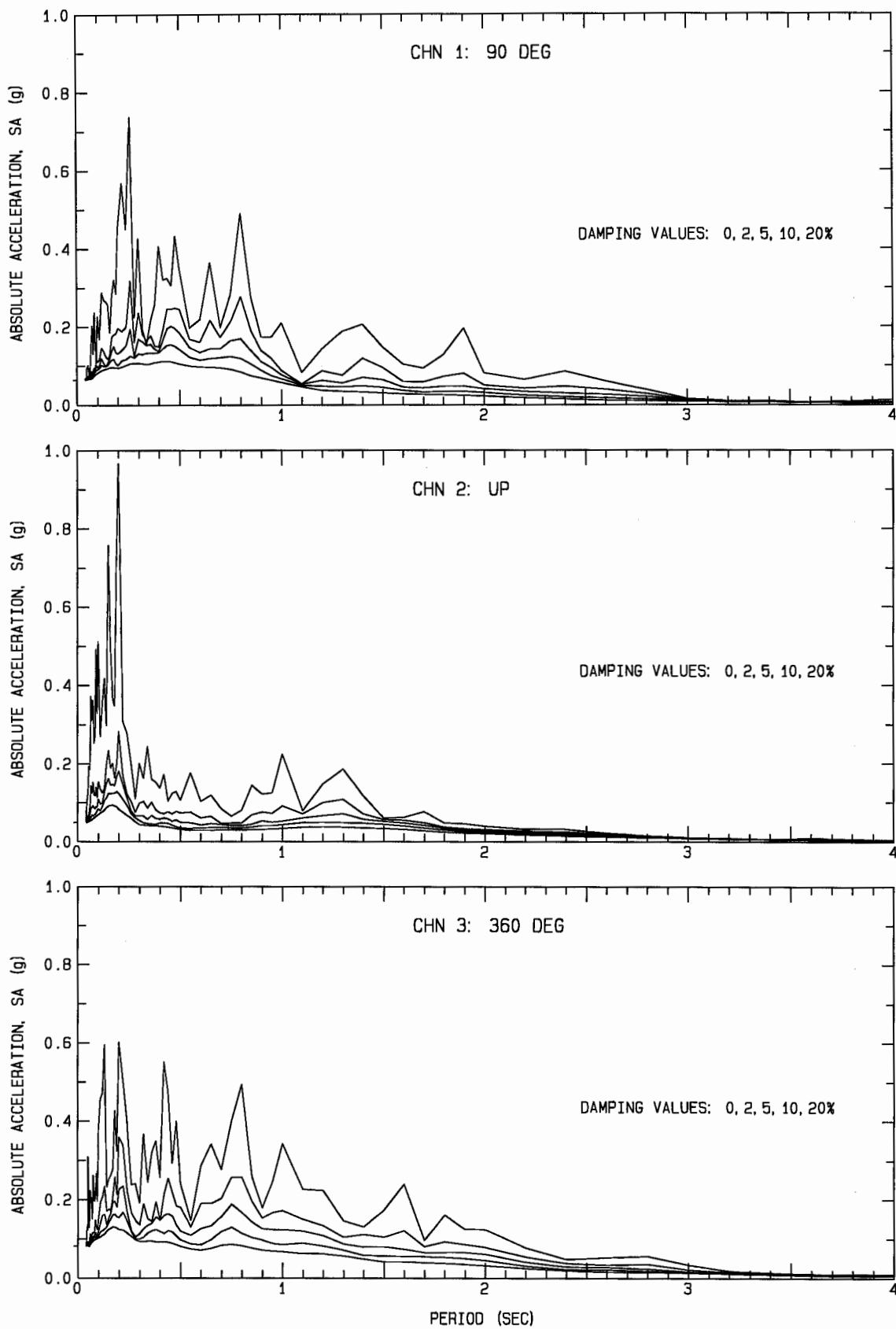
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 LANCASTER - FOX AIRFIELD GROUNDS
 CHN 3: 360 DEG

ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 Hz.
 24475-S4819-94026.02 042594.0955-QN94A475

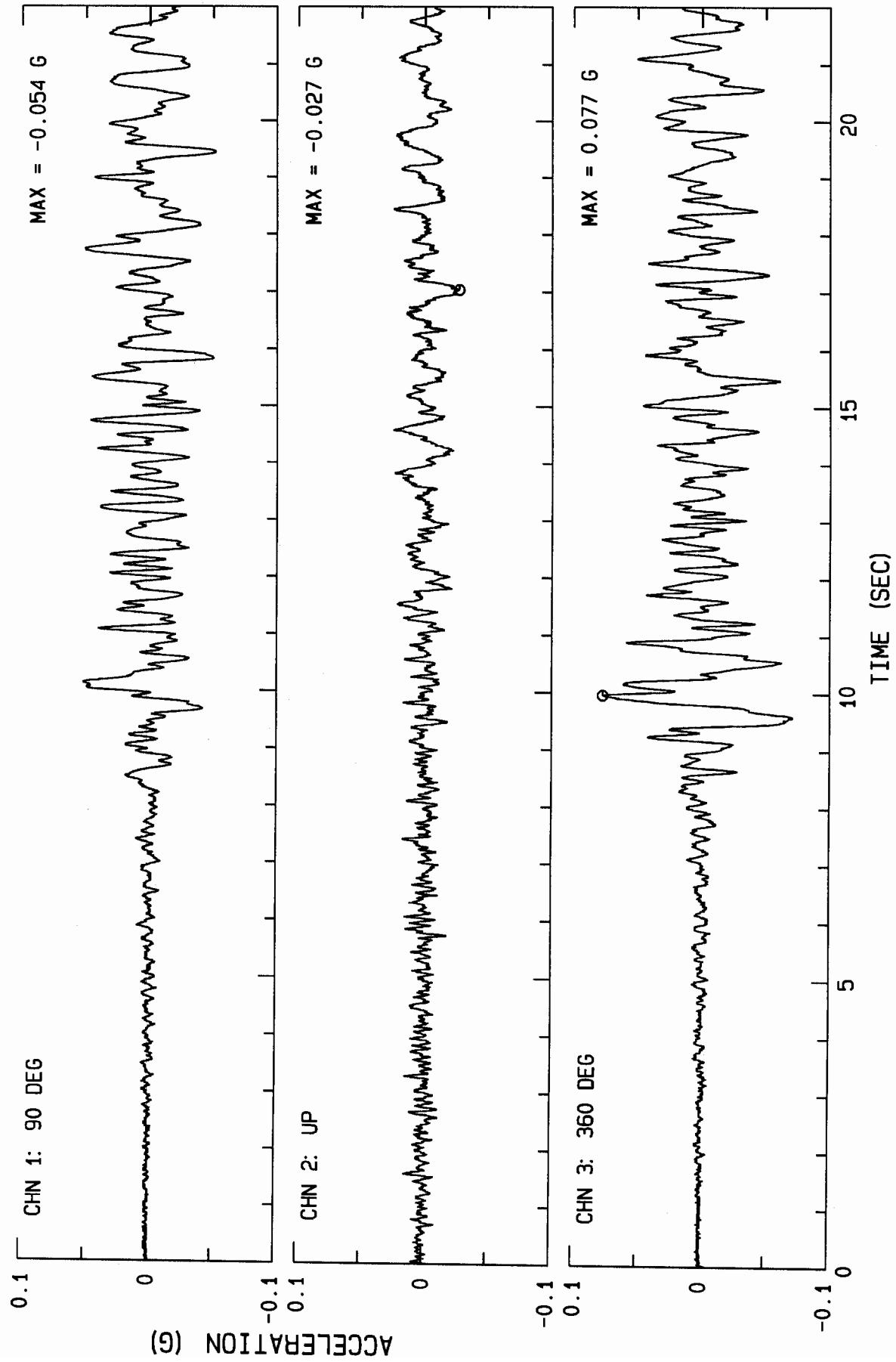
— RESPONSE SPECTRA: PSV, PSA & SD — — FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



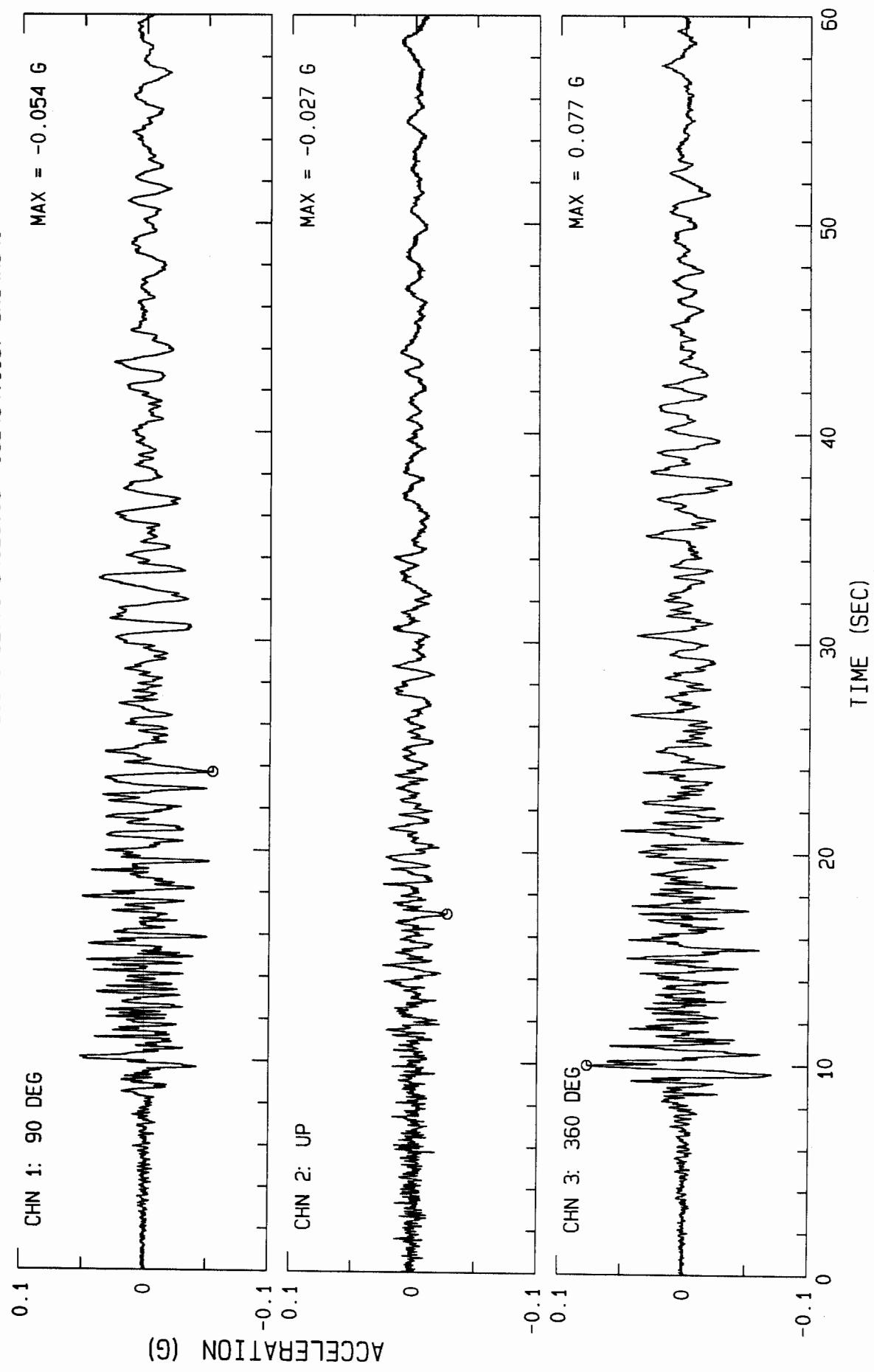
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LANCASTER - FOX AIRFIELD GROUNDS
ACCELEROGRAF BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 23.0-25.0 HZ.
24475-S4819-94026.02 042594.0955-QN94A475



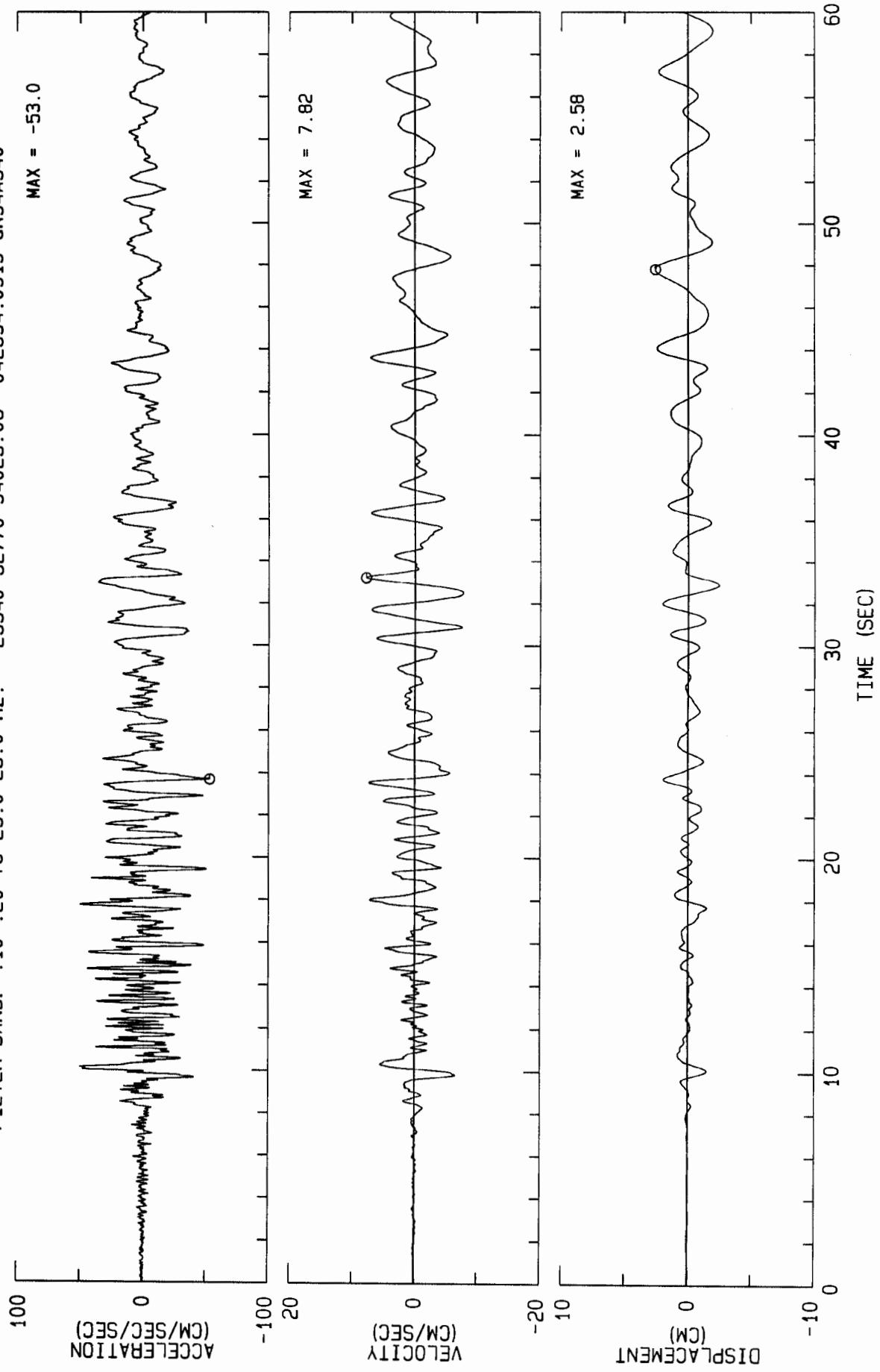
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
VENTURA - HARBOR & CALIFORNIA
UNCORRECTED ACCELEROMGRAM 25340-S2770-94025.06 032494.1157-QN94A340



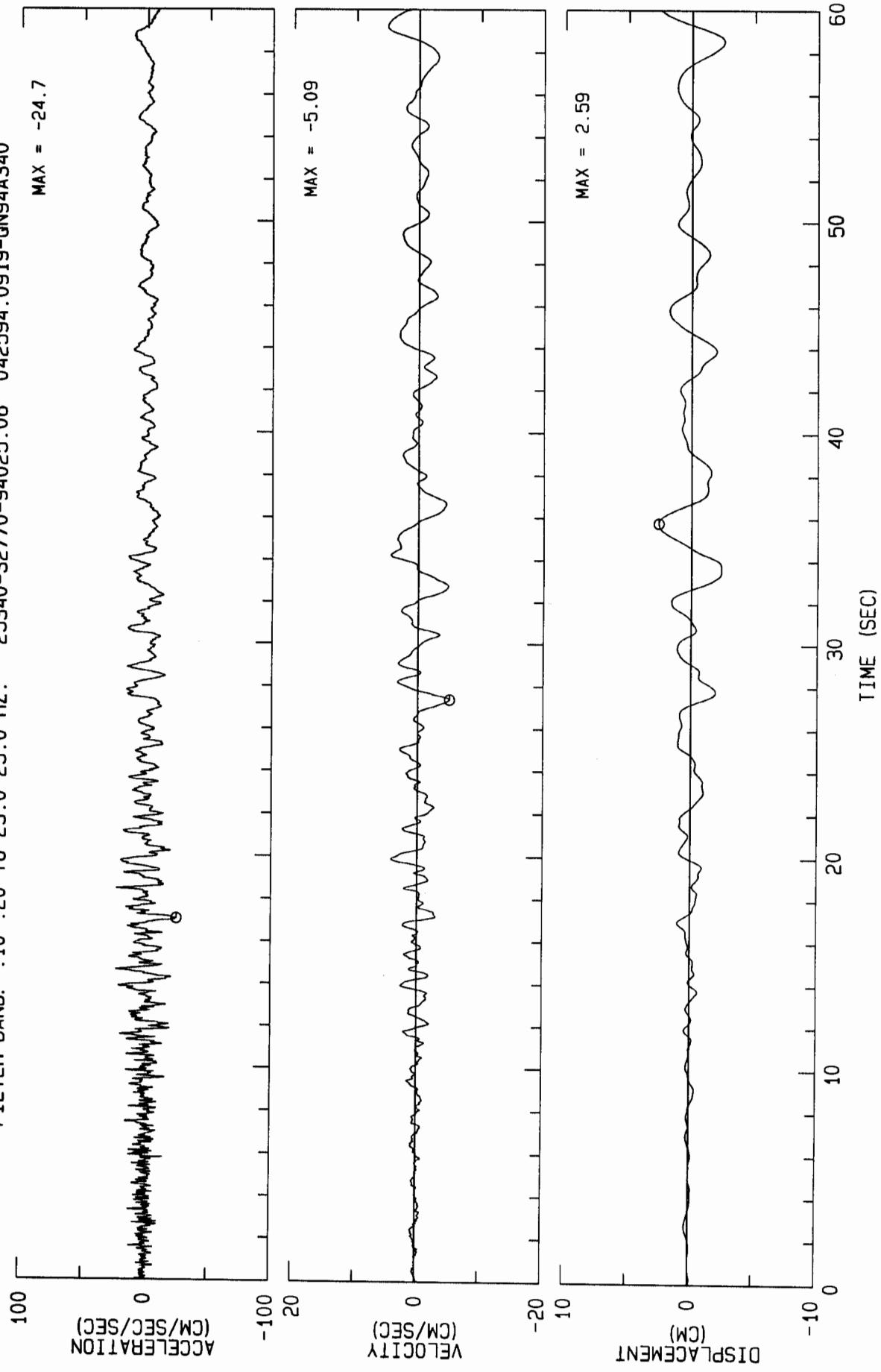
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
VENTURA - HARBOR & CALIFORNIA
UNCORRECTED ACCELERGRAM 25340-S2770-94025.06 032494.1157-QN94A340



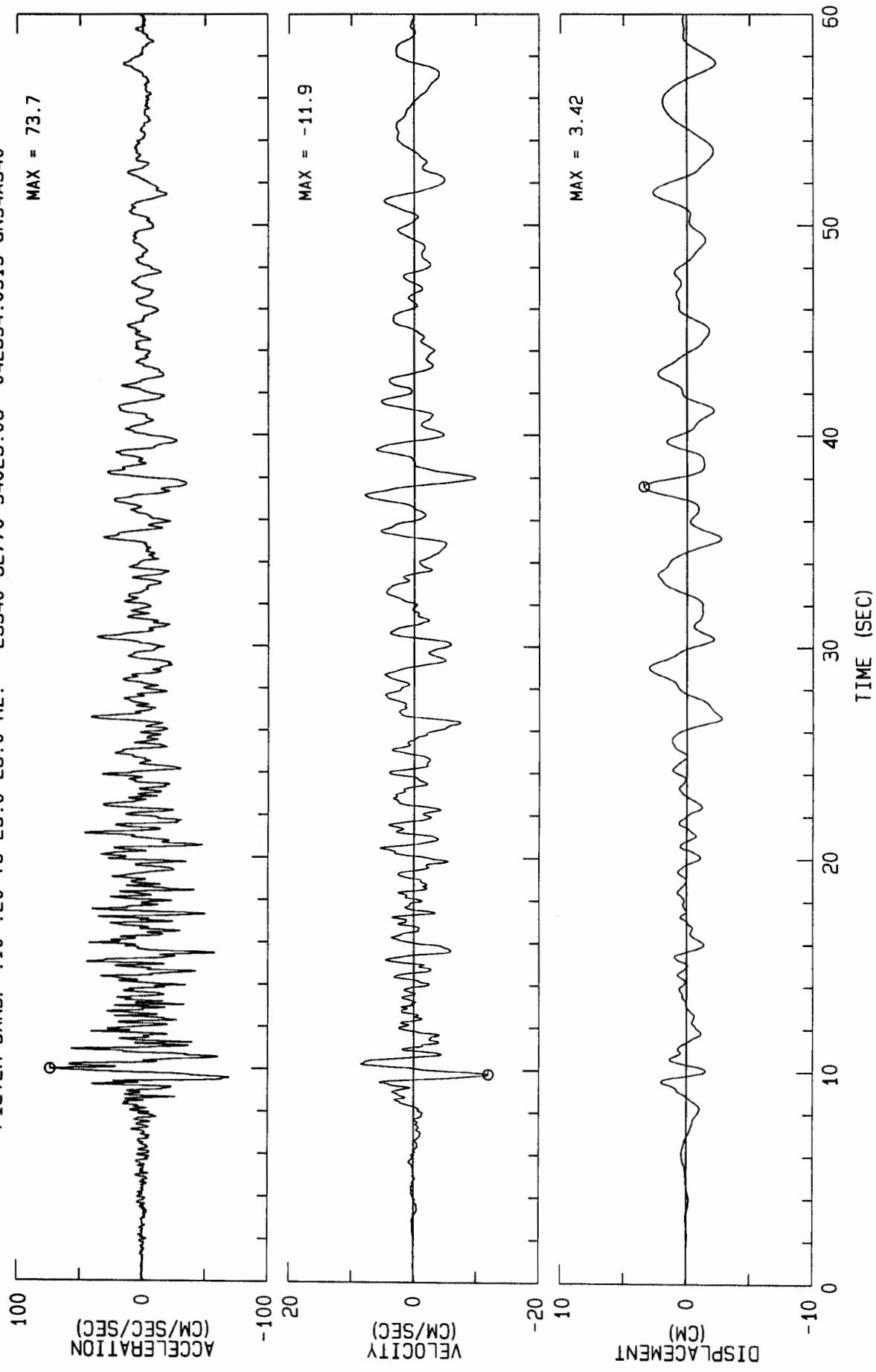
NORTHridge EARTHQUAKE JANUARY 17, 1994 04:31 PST
VENTURA - HARBOR & CALIFORNIA CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .10-.20 TO 23.0-25.0 Hz. 25340-S2770-94025.06 042594.0919-QN94A340



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
VENTURA - HARBOR & CALIFORNIA CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .10-.20 TO 23.0-25.0 Hz. 25340-S2770-94025.06 042594.0919-QN94A340

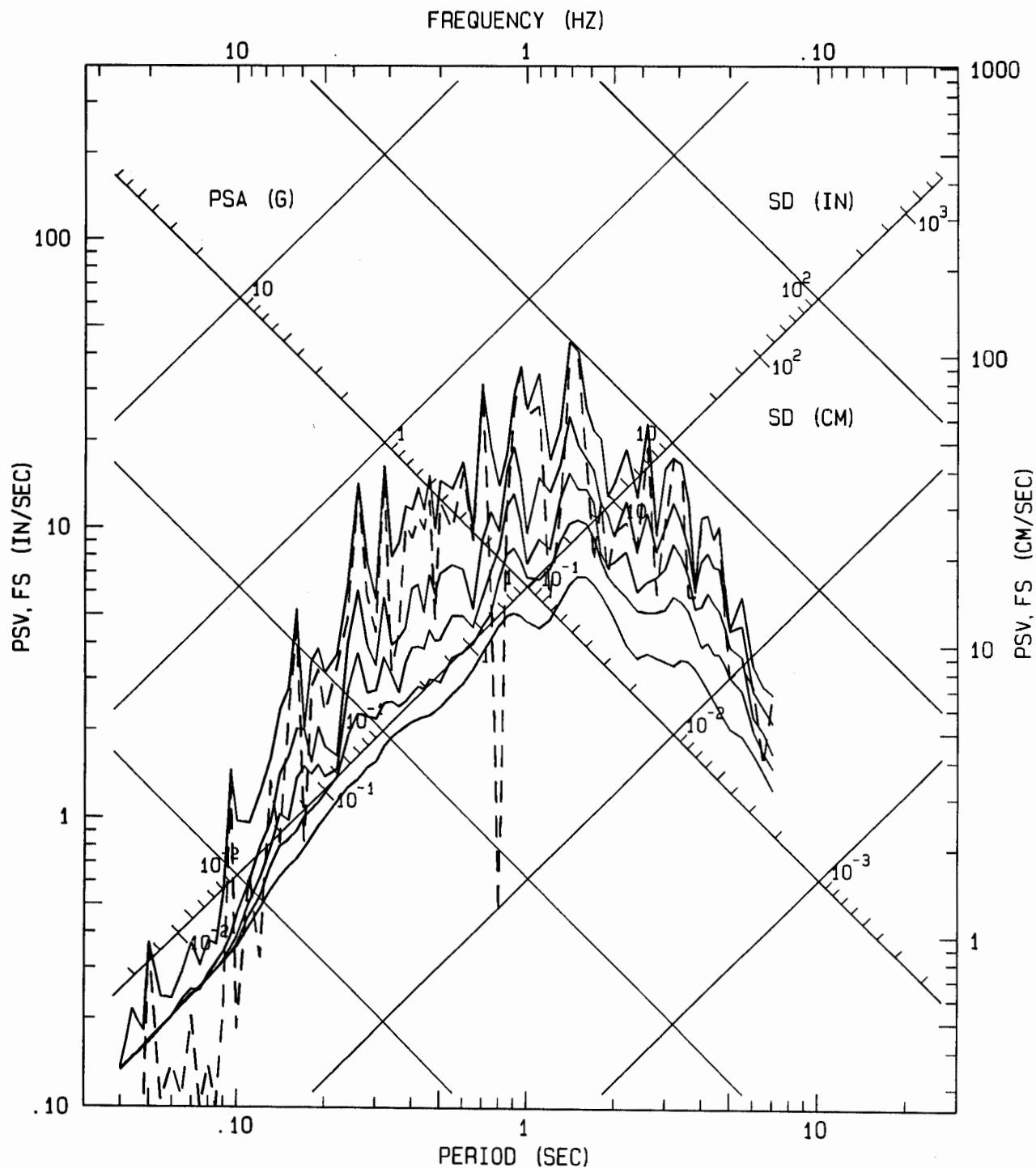


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
VENTURA - HARBOR & CALIFORNIA CHN 3: 360 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .10-.20 TO 23.0-25.0 Hz. 25340-S2770-94025.06 042594.0919-0N94A340



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 VENTURA - HARBOR & CALIFORNIA
 CHN 1: 90 DEG
 ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .10-.20 TO 23.0-25.0 Hz.
 25340-S2770-94025.06 042594.0925-QN94A340

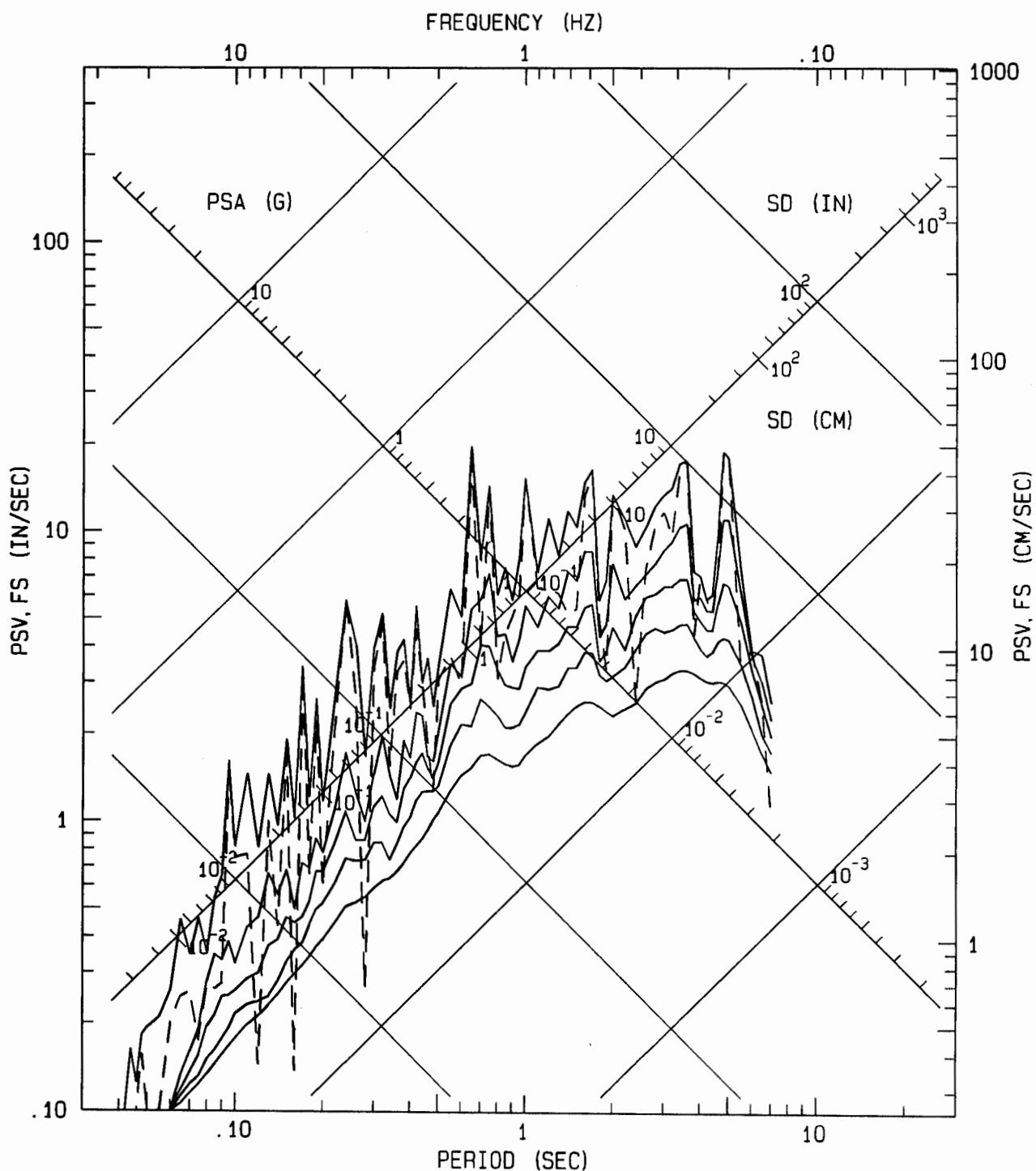
— RESPONSE SPECTRA: PSV, PSA & SD — — FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
VENTURA - HARBOR & CALIFORNIA
CHN 2: UP

ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .10-.20 TO 23.0-25.0 Hz.
25340-S2770-94025.06 042594.0925-QN94A340

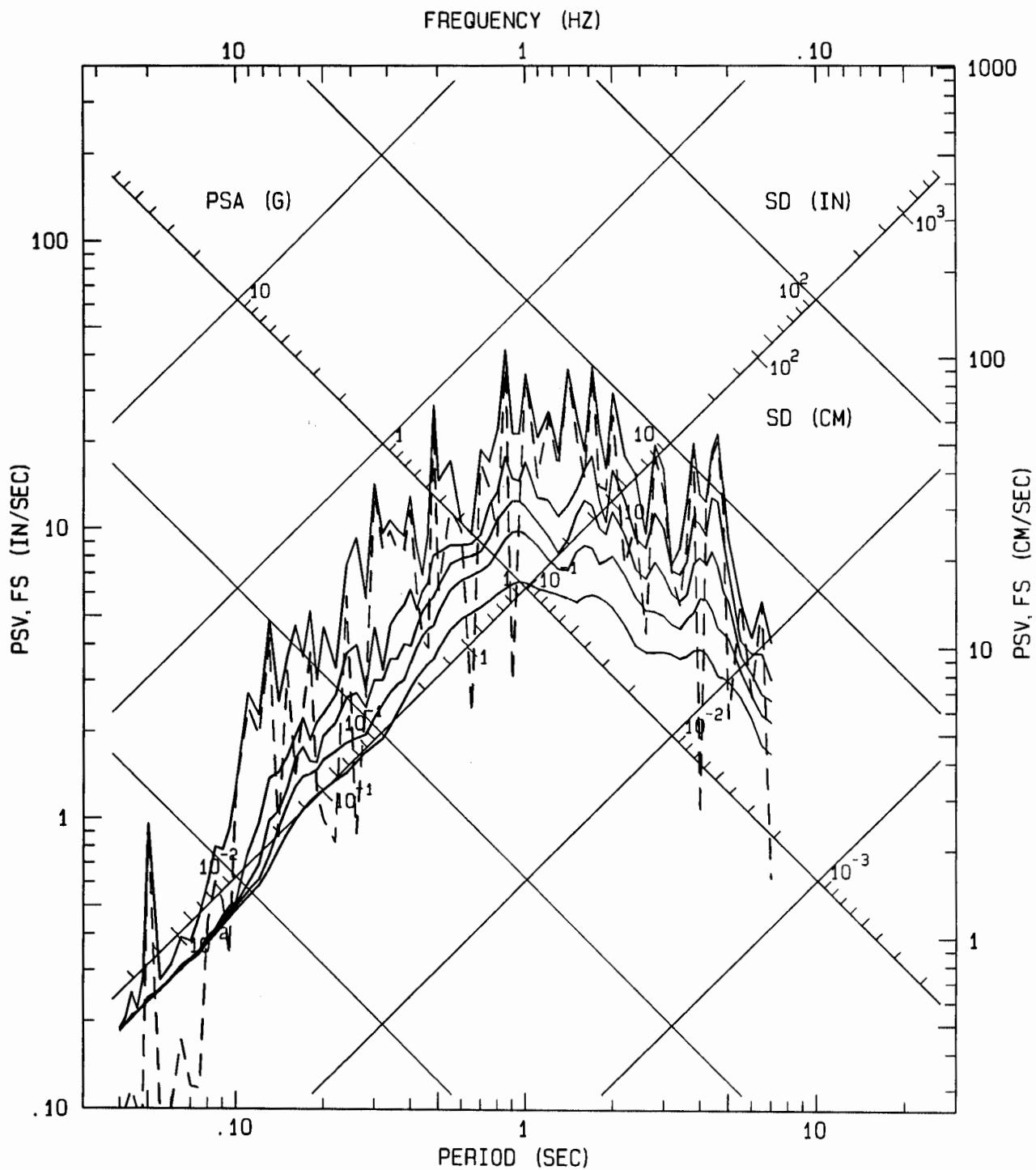
— RESPONSE SPECTRA: PSV, PSA & SD — — FOURIER AMPLITUDE SPECTRUM: FS
DAMPING VALUES: 0, 2, 5, 10, 20%



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 VENTURA - HARBOR & CALIFORNIA
 CHN 3: 360 DEG

ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .10-.20 TO 23.0-25.0 Hz.
 25340-S2770-94025.06 042594.0925-QN94A340

— RESPONSE SPECTRA: PSV, PSA & SD — — FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



NORTHridge EARTHQUAKE JANUARY 17, 1994 04:31 PST
VENTURA - HARBOR & CALIFORNIA
ACCELEROGRAm BANDPASS-FILTERED WITH RAMPS AT .10-.20 TO 23.0-25.0 Hz.
25340-S2770-94025.06 042594.0925-QN94A340

